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## METEOROLOGICAL SERVICE, DOMINION OF CANADA.

# Monthly Weather Review.

VOL. XXIV

JANUARY, 1900.

No. 1

## INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure over the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

## REMARKS UPON THE WEATHER.

The weather of January was characterised by unusually high temperature, much bright sunshine, moderate precipitation, and a preponderance of winds from a southerly direction throughout the greater portion of the country. The comparatively open weather, resulting in the melting of snow over large areas, was a great hindrance to lumbering and other interests, but upon the ranches of the west it was of great benefit to cattle.

In British Columbia the weather was exceptionally fine and bright, whilst the rainfall and temperature were about average, the only exception being at Victoria and Barkerville where the temperature was considerable above average and the precipitation below, and at Agassiz where both were much above average. On Vancouver and the Gulf Islands there were only very light flurries of snow and a number of garden flowers were in bloom, roses being gathered at Victoria on the 17th. At Port Renfrew on the west coast of Vancouver Island ripe strawberries were gathered on the 31st. At Okanagan Mission on the Upper Mainland buttercups were in bloom throughout the month.

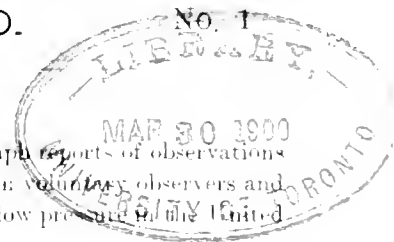
The weather over the North-west Territories was phenomenally mild and it was not until the end of the month that any pronounced cold weather set in. The precipitation at all stations, excepting Edmonton and Battlefield, was average or slightly below, rain falling at many places. This mild weather with much bright sunshine quickly melted the snow and although benefiting cattle, which were enabled to graze, was a great hindrance to sleighing.

In Manitoba the weather was almost equally mild with that in the Territories; and the precipitation though varying slightly, was about average, the only marked difference being 1.13 inch above at Barnardo. Temperatures below zero occurred frequently, but they were unimportant until the last few days of the month; upon several days the temperatures exceeded 40° at some stations more especially on or about the 19th. This mild weather caused the snow to melt quickly leaving the ground bare or nearly so in most districts. Throughout the month there was much bright sunshine. Fogs were recorded at three stations.

The mild weather in the last mentioned province also extended to Ontario but in this portion of the country the excess of average was not nearly so great and at a few stations the temperature was normal. The precipitation was generally below average, at a few places however it was a little above. In most districts there was much bright sunshine alternating frequently with cloud and falls of rain or snow, also much wind. Temperatures below zero were almost general but they were nowhere exceptional. In northern districts sleighing was fair throughout the month but in the southern portion of the province there were only several short periods during which sleighing was fair. Fogs occurred at a large number of places, five being reported from each of four stations.

In the province of Quebec the weather though dull was unusually mild, whilst the precipitation, which included some rain, was generally average or above. At Quebec and Father Point, however, the precipitation was slightly below average. With the exception of 27.1 at Chicoutimi the temperatures recorded below zero were quite moderate. The sleighing was not good until after the 20th and at Father Point the ground was bare up to the 26th. At this station the river was almost clear of ice throughout the month.

The weather conditions of New Brunswick were much the same as in Quebec the temperature and precipitation being generally above average, there being much cloud, the changes being frequent and rapid, and much rain falling in place of snow. At some inland stations there were some quite low temperatures, the

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observer at Sussex reporting 31.9 and at Fredericton 23.9; at other stations the lowest recorded was 18.0 at Chatham. The sleighing was rain up to the 21st, after which the ground was almost bare until nearly the last day of the month, when more snow fell. Fogs were reported from several stations.

In Nova Scotia the temperature and precipitation were also above average, and the weather was very unsettled with frequent falls of rain or snow. Strong winds were very prevalent, and on the 2nd, 12th, 20th, 26th, 29th and 31st severe gales occurred, a velocity of 52 miles being reached at Halifax on the 20th. Temperatures below zero were reported from three stations only; and maximum temperatures above 50 were recorded nearly everywhere. There was little sleighing during the month, the snow that fell soon melting.

The weather in Prince Edward Island was much the same as in New Brunswick the changes being frequent and sudden and the temperatures unusually high; the amount of precipitation, however, was below average at Charlottetown. Several storms passed over the province accompanied by snow or rain. No temperatures below zero were recorded. There was little or no sleighing during the month and on the 31st the ground was bare. F. F. PAYNE.

### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was below average in all portions of the Dominion except along the British Columbia Coast and over the eastern portion of Nova Scotia, in both of which localities the average was just about maintained. In Alberta the deficiency amounted to 0.13 of an inch and in the Lower St. Lawrence Valley to .12 of an inch.

### LOW AREAS.

As many as sixteen areas of low pressure were sufficiently well marked to be charted; in fact the greater number were of considerable importance and attended by high winds and gales. Four of the areas passed from the region of the Gulf of Mexico to the Maritime Provinces but the more general track was from the far North-west, over Lake Superior to the Gulf of St. Lawrence.

No. 1 formed over the Lake Region during the 30th and 31st of December and on January 1st it was merged in No. 2 which was passing up the Atlantic Coast. It was attended by strong winds and gales over Ontario, together with a fall of snow which in northern localities was for the most part quite heavy. No. 2 was situated over Florida on the evening of the 31st December and during January 1st, and the earlier part of the 2nd it travelled with great rapidity to and over the Maritime Provinces; at the same time it developed into a severe storm bringing a heavy gale throughout Eastern Canada accompanied by heavy rains in the southern portions and snow in the northern. No. 3 was a shallow depression which moved quickly from the North-west far north over Canada to the Gulf of St. Lawrence. It was attended by a few light scattered snow showers. No. 4 passed over British Columbia on the 5th, the North-west on the 6th, reached Ontario on the 7th and the Maritime Provinces on the 8th. It was an area of considerable energy attended by high winds but by only light precipitation. In the Maritime Provinces it gave a gale very generally. No. 5 was a moderate depression which moved from British Columbia to the Gulf of St. Lawrence between the 7th and 10th. From the Lakes to the Atlantic it was attended by light falls of snow and rain together with moderate gales in the Maritime Provinces. No. 6 was a shallow depression from British Columbia, which passed over the Territories on the 9th, and after giving light snowfalls as far as Lake Superior it became merged on the 11th in No. 7. No. 7 apparently passed from the Mississippi Valley to the Atlantic Coast and thence over Nova Scotia causing strong winds and gales in Canada from the Lower Lakes to the Maritime Provinces together with a fall of snow except in the southern portion of the Maritime Provinces, where it rained heavily. No. 8 caused a moderate fall of snow over Ontario during the 13th night, and on the 14th, and then dispersed; previously it had given light falls of snow in the Territories and Manitoba. No. 9 was apparently subsidiary to No. 8; it travelled between the 15th and 16th with great rapidity as a very shallow depression from the West-south-west states, over the Lower Lakes and St. Lawrence Valley to the Gulf and was attended by light snowfalls from the Lakes to the Maritime Provinces. No. 10 was a shallow depression which travelled from Alberta to Lake Superior between the 17th and 19th and was then merged in No. 11. No. 11 moved northward from the east coast of the Gulf of Mexico to Pennsylvania, thence north-eastward and over Nova Scotia. It developed considerable energy as it progressed and caused strong winds together with rain which in most places was heavy. No. 12 travelled with great rapidity; it was situated in the North Saskatchewan valley on the evening of the 21st and by the evening of the 23rd, had reached the Gulf of St. Lawrence. It was attended by a few light scattered showers only, but was chiefly noticeable for the high west to north winds which immediately followed it. In the Maritime Provinces the force of a gale was generally recorded. No. 13 moved into British Columbia on the 22nd accompanied by fresh gales and heavy rains. Its course was then a little south

of the Boundary Line to the Lake Region where on the 24th and 25th it brought rain turning to snow. It then passed to the New England coast where it was seemingly reinforced by a subsidiary, for a very rapid increase in energy occurred and during the night of the 25th and on the 26th it swept over the Maritime Provinces as a storm of great violence; the barometer dropped to 28.60 inches, rain fell very heavily and heavy gales were everywhere experienced and at the same time a heavy snowstorm was general over the Province of Quebec. No. 14 was a moderate depression which moved into the North Saskatchewan Valley on the 25th and dispersed over the northern portion of the Lower Lake Region on the 29th. In the Georgian Bay region it caused a heavy fall of snow in nearly all localities. No. 15 appeared off the Florida coast on the 27th; it soon proved to be a disturbance of much energy and as it travelled quickly up the United States Atlantic seaboard and over the Maritime Provinces it caused a fresh to heavy gale over Eastern Canada on the 29th accompanied by snow and rain, chiefly the latter. No. 16 travelled from Alberta to the Lake Region between the 28th and 30th attended by light snow except in the Georgian Bay Region where the fall was heavy. After leaving the Lake Region the depression developed greater energy and during the 31st it caused a heavy gale to set in over the Gulf of St. Lawrence and in the Maritime Provinces together with heavy snow and rain.

### HIGH AREAS.

Eleven areas of high pressure were traced during the month: half of the number travelled far to the northward into the Ottawa and St. Lawrence Valleys the remainder passed southward from the far North west to the Central and Southern States.

No. 1 was a continuance of No. 11 on the December Chart. It was still centred in the North-west Territories on the morning of the 1st but afterwards it passed southward to the Lower Mississippi Valley and thence to the Middle Atlantic Coast. No. 2 was a moderate high which developed over Alberta on the 3rd and also travelled southward reaching the Middle Atlantic Coast on the 7th. No. 3 appeared in Manitoba on the 7th and travelled quickly over the Lake Superior District to the Ottawa Valley and thence off the New England Coast. During its presence the temperature on the night of the 8th was from 2 to 10 degrees below zero in the Ottawa and St. Lawrence Valleys. No. 4 formed on the night of the 9th in the North Saskatchewan Valley and on the 9th passed eastward and over Manitoba attended by zero weather. During the 10th it travelled quickly from Lake Superior to the Ottawa Valley bringing a rapid fall in temperature from the Lake Region to the Atlantic Coast and at night several degrees below zero were generally recorded in Northern Ontario, and throughout Quebec. No. 5 was a very moderate high which between the 13th and 16th passed over Canada from the North-west Territories to the Maritime Provinces; it was not accompanied by any low temperatures. No. 6 spread quickly over Canada from the Lakes to the Atlantic on the 16th causing a very rapid fall in temperature at night from Eastern Ontario to the Maritime Provinces. No. 7 was seemingly an offshoot of a persistent high at the time covering the Pacific States. It travelled over the Central States to the Middle Atlantic Coast. At the same time there was a sharp rise in pressure on the 20th over the Lake Region, the Ottawa and St. Lawrence Valleys accompanied by a very rapid drop in temperature; at Ottawa the temperature fell forty-four degrees in less than twelve hours. No. 8 was an area of importance which travelled between the 22nd and 24th from the North-west Territories to the Maritime Provinces attended by a short spell of decidedly cold weather more especially in the Ottawa and St. Lawrence Valleys. No. 9 was situated in the North Saskatchewan Valley on the 24th accompanied by decidedly cold weather. It spread quickly eastward together with its accompanying cold weather; its centre meanwhile passed south to the Central States, then to the Atlantic Coast and north-easterly to Nova Scotia and over Newfoundland. No. 10 moved into Alberta on the 26th accompanied by cold weather and on the morning of the 27th the temperature ranged from 5 to 26 degrees below zero from the Rockies to Manitoba; after the 27th the area passed southward to the States bordering on the north shore of the Gulf of Mexico when its attendant cold wave quickly moderated. No. 11 moved into the North Saskatchewan Valley on the night of the 28th. It reached Manitoba on the night of the 31st and over the eastern portion of the Territories and in Manitoba it was attended by very cold weather. Prince Albert recorded 39.5 degrees below zero, Minnedosa 32 below, Winnipeg 31 below, and Oonikap 40 below.

### WINDS.

In British Columbia the winds were chiefly easterly and southerly. Gales were experienced on several occasions, especially on the 12th, and between the 22nd and 23rd, but the force as a rule was from a light to a moderate breeze. In the North-west Territories and Manitoba the winds were mostly from the southward and the westward; there were from four to five gales and sixteen days on which the force of a fresh to strong breeze was attained. In the Lake Region, the Ottawa Valley and the Upper St. Lawrence Valley the winds were also as a rule southerly and westerly, fresh to strong breezes were very prevalent and the force of a gale was often reached; in fact in the Lake Region there were as many as eight gales. In the Gulf of St. Lawrence and in the Maritime Provinces the westerly direction predominated, there was an unusually large proportion of high winds and no less than nine gales, nearly all of which attained to the force of fresh or

heavy gales. The gale occurred on the 1st, 7th, 10th, 12th, 20th, 23rd, 26th, 29th and 31st. At those stations in the Maritime Provinces where winter navigation is pursued all of the gales were warned except the one on the 7th, but the warning for the storm on the 20th was issued late.

#### BRIGHT SUNSHINE.

Bright sunshine was below average in Quebec and the Maritime Provinces, and above average in all the large remaining portion of Canada. Toronto and Kuper Island recorded the greatest amount above average, and Fredericton the largest amount below average.

#### TEMPERATURE.

The temperature was above average throughout the Dominion, and to a considerable amount in nearly all localities. In Assiniboia the large excess of 17° was recorded, and the smallest amount, 2° above average, occurred along the shore of Lake Erie.

*The Highest and Lowest Temperature in each Province during January, 1900, were :*

British Columbia,	62° 0 on 27th at Agassiz.	—15° 0 on 28th at Griffin Lake.
North-west Territories,	62° 0 on 18th at Medicine Hat, Knee- hill and Crane Lake.	—10° 0 on 30th at Oonikup.
Manitoba,	47° 8 on 19th at Minnedosa.	—32° 9 on 31st at Brandon.
Ontario,	63° 0 on 10th at Port Hope.	—43° 0 on 1st at White River.
Quebec,	48° 0 on 23rd at St. Agathe.	—27° 1 on 28th at Chicoutimi.
New Brunswick,	52° 0 on 20th at Sussex.	—31° 0 on 1st at Sussex.
Nova Scotia,	55° 0 on 21st at Wolfville.	—12° 0 on 6th at Port Hastings.
Prince Edward Island.	47° 0 on 21st at Hamilton.	0° 3 on 19th at Summerside.

#### PRECIPITATION.

The precipitation was above average to a considerable amount in the Maritime Provinces, except in portions of Prince Edward Island, where the average was not reached. Elsewhere throughout the Dominion, except locally, the precipitation was below the average, the greatest discrepancy occurring in British Columbia. The local exceptions were Montreal, nearly two inches above the average, Parry Sound, half an inch above, Minnedosa, Battleford and Edmonton 0·2 inches above. The precipitation over the greater part of Canada was very largely rain, until the latter part of the month, when it was chiefly snow, especially in Ontario and Quebec. On the last day of the month snow covered the Province of Quebec to the depth of from 13 to 30 inches. In Northern New Brunswick there was from 10 to 20 inches, and in Northern Ontario and along the north shore of Lake Superior to the Lake of the Woods, from 10 to 24 inches. In Southern Ontario, and also in Manitoba and the Territories, there was only a light covering for the most part, and in the southern parts of the Maritime Provinces and the Territories, and also over the greater portion of British Columbia, there was none.

#### THICKNESS OF ICE.

NORTH-WEST TERRITORIES AND MANITOBA.—Battleford, 18 inches ; Swift Current, 16 inches ; Minnedosa, 24 inches ; Elgin, 24 inches ; Brandon, 24 inches ; Oonikup, 24 inches.

ONTARIO.—Port Arthur, 17 inches ; White River, 16 inches ; Parry Sound, 14 inches ; Southampton, 8 inches ; Port Stanley, 5 inches ; Kingston, 6 inches ; Bissett, 12 inches ; Midland, 11 inches ; Port Hope, 12 inches ; Georgetown, 15 inches ; Peterboro', 24 inches ; Orillia, 14 inches ; Lansdowne, 9 inches ; Paris, 14 inches ; Stouffville, 14 inches ; Kinnmount, 10 inches ; Hamilton, 10 inches ; Port Dover, 5 inches ; Arden, 17 inches ; Ottawa, 12 inches ; Durham, 18 inches ; Barrie, 8 inches.

MARITIME PROVINCES.—Chatham, 12 inches ; Charlottetown, 11 inches ; Fredericton, 19 inches ; Parrsboro', 10 inches ; Truro, 13 inches.



# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JANUARY, 1900.

a Barometer not reduced to Sea Level • Stations not furnished with Registering Thermometers

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PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA. JANUARY.

*Barometer not reduced to sea level. \* Stations not furnished with Registering Thermometer.*

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# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JANUARY, 1900.

a Barometer not reduced to sea level. \* Stations not furnished with Registering Thermometers.

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				Mean Reduced	Highest.	Lowest.	Range.	Mean.	Difference from average.	Years observed.	Highest.	Date.	Lowest.	Date.	Mean daily range.	Mean temperature of day.	Mean relative humidity.	No. of days completely clouded.	DIRECTION OF WIND FROM				Mean miles per hour.	Highest velocity.	Page and direction from.	Amount.	Difference from average month.	Heaviest fall in month.	Days with 40 or more No. of four days.	No. of fogs.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c. DURING  
JANUARY, 1900.

STATIONS.	RAINFALL.					SNOWFALL.				REMARKS.
	Amount in inches.	Days of Over.	No. of Fair Days.	Heaviest Fall in Month.	Date.	Amount in inches.	No. of Days.	Heaviest Fall in Month.	Date.	
<b>BRITISH COLUMBIA—</b>	in.			in.		in.		in.		
Vancouver.....	6.84	19	12	1.05	11					
Vancouver (2).....	3.74	12	14	1.10	12					
Langley.....	6.83	18	13	1.35	11					
Goldstream Lake.....	10.70	22	9	1.73	12					
Royal Oak.....	5.00	17	14	1.04	11					
Nanaimo.....	7.66	16	15	1.27	5					
Alberni.....	10.73	20	11	1.93	7	3.0	3	1.5	5	1st. Yellow violets out.
Cumberland.....	6.43	11	16	1.15	15	3.5	4	3.5	22	
<b>N. W. TERRITORIES—</b>										
W. Beaver Hills.....	0.21	1	19	0.21	19	6.0	14	3.0	8	
Saltevoots.....	0.00	0	25	—		9.0	5	3.0	13/25	
Immsfall.....	0.00	0	25	—		2.6	6	1.5	22	
N. E. Beaver Hills.....	0.03	1	27	0.03	18	4.0	2	3.0	3	
Crescent Lake.....	0.00	0	24	—		9.1	7	3.2	3	6th, S.W. Chances.
Coutts.....	0.00	0	28	—		2.0	3	1.0	24	4th to 18th. Fine and mild.
<b>MANITOBA—</b>										
Morden.....						14.5	5	12.0	13	
Rapid City.....						10.1	6	4.0	13	
Shoal Lake.....						7.0	5	4.0	13	
Oakbank.....						7.0	8	3.0	14	
Norway.....						10.8	10	6.0	14	First sleighing on 13th.
Hartney.....						4.0	7	1.0	13	
Turtle Mountain.....						2.0	3	1.0	12	
<b>ONTARIO—</b>										
Jernyn.....	0.10	1	25	0.10	7	20.0	5	7.0	30	
Scarboro.....	0.88	6	17	0.60	15	17.0	10	5.0	11	
Dutton.....	1.25	1	28	1.25	15	6.0	2	6.0	11	
Emisdale.....	0.30	2	20	0.25	17	15.8	10	4.5	29	
Lansdowne.....	2.51	3	23	2.24	20	10.0	5	4.0	11	
Deer Park.....	0.38	3	20	0.18	10	12.1	8	5.5	11	
Georgetown.....	0.42	7	11	0.15	25	24.2	14	5.6	11	
Goderich.....	1.10	4	20	0.50	23	16.5	8	3.0	14/2	
Midland.....	0.26	2	22	0.21	9	4.0	3	2.0	1	Fog on 17th and 18th.
Parma.....	1.78	2	11	0.93	20	45.0	9	8.0	3/26	
Kitley.....	1.17	2	23	1.00	20	13.5	6	7.0	12	Fog on 19th.
Cherry Valley.....	1.00	3	20	0.48	19	39.0	8	12.0	31	
Wooler.....	1.21	5	20	0.73	20	20.0	8	6.0	30	
Watford.....	1.28	4		0.78	16					
Elgin.....	1.61	2	22	1.00	20	29.0	7	6.0	1/12	
Sunshine.....	0.76	3	16	0.63	7	29.0	13	4.0	3/16	
Providence Bay.....	0.22	1	20	0.22	9	25.0	11	8.0	28	24th. Thunder and lightning with snow storm.
Warton.....	0.60	5	20	0.25	10	24.0	6	10.0	30	
Wilton Grove.....	0.70	2	23	0.68	7	19.0	6	6.0	11	
Port Burwell.....	0.88	6	20	0.48	20	5.0	5	3.5	13	
Croydon.....	1.69	4	21	0.90	20	26.0	6	6.0	29	
Huntsville.....	1.15	2	22	0.95	7	14.5	7	3.5	29	
Robbins Mills.....	0.45	2	21	0.35	7	27.0	8	10.0	28	
Aurora.....	0.24	5	17	0.14	24	16.8	10	7.3	11	
Dealtown.....	1.26	8	22	0.43	11	3.5	1	2.5	11	
Orangeville.....	0.84	5	19	0.53	8	17.1	7	8.1	12	
Oliver's Ferry.....	0.65	1	24	0.65	20	7.0	4	5.0	12	
Princeton.....	1.19	9	12	0.95	19	24.0	10	6.0	11	
Lion's Head.....	0.62	3		0.33	9					
Ursin.....	0.47	4	19	0.18	7	23.0	8	6.0	11	
Uxbridge.....	0.05	1	24	0.05	7	12.5	5	6.5	11	
Wyoming.....	0.10	1	27	0.10	18	7.0	3	3.0	11/15	
Montague.....	1.60	3	24	1.08	20	11.0	3	6.0	11	
Arden.....	1.79	9	14	0.67	24	20.0	8	6.0	12	
<b>NEW BRUNSWICK</b>										
Poinc Escuminac.....	1.03	6	20	0.62	21	18.0	5	4.0	1	
<b>NOVA SCOTIA</b>										
Port Morien.....	3.79	9	16	1.47	21	7.1	9	3.0	16	
<b>P. E. ISLAND</b>										
Mount Stewart.....	2.89	1	27	1.34	21					
Murray River.....	5.70									

*Aurora borealis.*

Where the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the faintest in brilliancy.

1. Gravenhurst, I.; Savanne.
4. Minnedosa, III; Hillview, IV; Savanne, W. Beaver Hills, III; Red Deer, IV.
5. Battleford, IV; Minnedosa, II; Hillview, IV; Savanne, Cunningham Manor.
7. Savanne.
16. Muckowpetung, IV.
18. St. Anne de la Poutiere, III.
19. Barnardo, IV; Banff, IV; Calgary, III.
20. Durham, II; Coldwater, II; Barnardo, II; Clontarf, IV; Battleford, III; Toronto, II; Stratford, IV; Gravenhurst, II; Cockburn Island, Bancroft, II; Calvin, Savanne, Lucknow, III; W. Beaver Hills, II; Georgetown, IV; Midland, II; Huntsville, II; Red Deer, III; Pembina Crossing, III.
21. Barnardo, IV; Cockburn Island; White River, IV; Savanne.
22. Hillview, III.
23. Prince Albert, II.
24. Barkerville, IV; Hillview, III; W. Beaver Hills, III; Red Deer, IV; Pembina Crossing, III.
25. Battleford, III; Barkerville, IV; Minnedosa, III; Hillview, IV; Savanne, W. Beaver Hills, III; Red Deer, II; Pembina Crossing, II.
26. Barkerville, IV; Minnedosa, III; Hillview, III; Pembina Crossing, III.
27. Hillview, IV; Chicoutimi, Duck Lake, III; Red Deer, IV; Truro, IV.
28. Duck Lake, II.
29. Barnardo, IV.
30. Savanne; Red Deer, III.
31. Barnardo, IV; Savanne.



PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN  
WAS ABOVE THE HORIZON IN THE MONTH OF JANUARY, 1900.

	HOURS ENDING													
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.
Victoria.....				0.00	0.14	0.32	0.34	0.37	0.32	0.27	0.24	0.11	0.00	
Kuper Island.....				0.00	S	0.20	0.31	0.34	0.39	0.37	0.37	0.28	0.07	
Agassiz.....				0.00	0.00	0.13	0.28	0.30	0.28	0.29	0.29	0.19	0.00	
Battleford.....				0.06	0.14	0.27	0.42	0.50	0.51	0.47	0.36	0.04	0.00	
Indian Head.....				0.00	0.00	0.09	0.23	0.35	0.50	0.50	0.49	0.14	S	
Brandon.....			0.02	0.20	0.36	0.45	0.50	0.54	0.45	0.39	0.25	0.00	0.00	
Winnipeg.....				0.00	0.30	0.44	0.41	0.47	0.50	0.49	0.48	0.26	0.04	
Durham.....				0.02	0.03	0.06	0.12	0.15	0.14	0.12	0.10	0.06	0.02	
Woodstock.....				0.06	0.17	0.30	0.30	0.34	0.39	0.30	0.27	0.24	0.08	
Toronto.....				S	0.17	0.31	0.39	0.41	0.48	0.47	0.43	0.33	0.13	
Lindsay.....				0.01	0.14	0.20	0.25	0.37	0.34	0.28	0.20	0.15	0.08	
Barrie.....			0.07	0.08	0.19	0.31	0.30	0.30	0.31	0.26	0.20	0.11	0.00	
Kingston.....				0.14	0.34	0.37	0.35	0.37	0.31	0.33	0.35	0.29	0.04	
Ottawa.....				0.02	0.15	0.22	0.33	0.44	0.41	0.30	0.29	0.27	0.04	
Montreal.....				0.00	0.06	0.27	0.35	0.42	0.37	0.35	0.36	0.14	0.00	
Fredericton.....			0.08	0.33	0.35	0.37	0.43	0.41	0.37	0.38	0.36	0.04	0.00	
Mean proportion for month (Constant sunshine being 1.)	0.23	0.24	0.21	0.32	0.28	0.37	0.40	0.40	0.26	0.34	0.22	0.22	0.31	0.27
Difference from average.....	0.03	0.06	0.00	0.01	0.01	0.04	0.03		0.05	0.07	0.05	0.03	0.05	0.06
Maximum daily amount.....	0.81	0.79	0.74	0.90	0.68	0.90	0.84	0.64	0.81	0.84	0.93	0.83	0.96	0.80
Date.....	30	30	30	27	30	30	31	6	22	29	8	31	6	27
No. of days completely clouded.....	9	12	20	9	11	7	10	22	15	9	14	15	13	13

## FORECASTS FOR JANUARY, 1900.

The forecast issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 904. These were divided as follows:—

District.	No. Issued.	Verified.			Percentage
		No. Fully	No. Partly	No. Not	
Mantoba	88	66	14	8	85.0
Lake Superior	82	63	16	3	86.6
Lower Lake Region	107	88	14	5	88.8
Georgian Bay	102	79	18	5	86.3
Ottawa Valley	102	77	15	10	82.8
Upper St. Lawrence	99	75	18	6	84.8
Lower St. Lawrence	93	76	11	6	87.6
Gulf	100	84	9	7	88.5
Maritime Provinces	134	102	19	10	85.1
Total	904	719	134	60	86.0

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

The storm warnings and forecasts were issued by Forecast Official B. C. Webber.

R. F. STUPART,

*Director.*

Meteorological Office, Toronto,  
26th February, 1900.

# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

FEBRUARY, 1900.

No. 2

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of February though nowhere extraordinary was not altogether featureless, there being some marked departures in temperature: From the Ottawa Valley westward to the Pacific it was from average to 6° below, whilst eastward to the Atlantic it was 1° to 6° above. The precipitation west of Ontario was average or below in the western portion of the country and above in the eastern portion, including Ontario. There was much bright sunshine in most districts, but in the more eastern Provinces the almost perpetual cold winds were exceedingly unpleasant. A report from Victoria that frogs were piping on the 20th was the only note of spring like character.

The weather in British Columbia was almost normal, the temperatures and precipitation being about average and other conditions differing little. Along the coast there were strong westerly gales on the 5th and 28th and from the 13th to 17th light snow fell in Vancouver Island. Over the upper mainland the weather was mild during the first half of the month, after which it turned cold, whilst over the lower mainland the temperature changed more frequently. At Victoria frogs were piping on the 20th.

In the North west Territories the weather was unusually cold, with a rather excessive amount of precipitation. A few blizzards were recorded but there were frequent calms and much bright sunshine. Temperatures of -10° were reported from several places and the minimum temperatures at most places occurred about the 8th. Owing to the light covering of snow sleighing was poor in most districts.

In Manitoba both the temperature and precipitation were below average and although it was unpleasantly cold there was much bright sunshine and frequent calms. Blizzards occurred at several stations, but they were not very severe. The minimum temperatures were equally severe with those recorded in the Territories and occurred generally on or about the 9th. There was little snow for sleighing until the end of the month and in some districts the ground was bare.

The weather in Ontario was unusually cold and although there was much bright sunshine the almost perpetual keen winds made it exceedingly unpleasant, added to this was an excessive amount of precipitation, which, however, was largely made up of heavy falls of snow on or about the 1th and 28th. Some exceedingly low temperatures occurred in Muskoka, Nipissing, and in districts north of Lake Superior, the minimum, which occurred on or about the 1st and 28th, being between -30.0° and -40.0° at many places and -50.0° at White River. From about the 9th to the 20th the sleighing was poor, previous to and after this period however it was fair.

In the Province of Quebec the weather was rather milder than usual, but it was stormy and unpleasant and the precipitation exceeded the average. The minimum temperatures were nowhere much below -28.0° at Brome being the lowest reported. Maximum temperatures exceeded 10° at many places. On the 9th and 13th there were heavy falls of rain causing floods in some places and much reducing the quantity of snow upon the ground.

The weather in New Brunswick was much like that in Quebec, both the temperature and precipitation being above average and strong winds and gales being exceedingly frequent. Minimum temperatures between -20.0° and -29.0° occurred at many places and maximum temperatures exceeding 50° were reported from three stations. In the southern portion of the Province much rain fell causing floods, but in northern districts the precipitation was almost altogether snow. The sleighing during the greater part of the month was poor excepting in northern districts where it was fair.

In Nova Scotia the weather was much milder, and the precipitation, which was mostly rain, was also above average. The mean temperature was 41.6° from Toronto and 40.7° from Pittsburgh, the latter being very low compared with reports from other seasons. Maximum temperatures, exceeding 50.0°, occurred at several places. Gale winds were much less frequent. There was little fogging and at the end of the month the coast of Cape Breton was free of ice.

The weather in Prince Edward Island was exceptionally mild but stormy, whilst the precipitation was about average. On the 15th it turned exceedingly cold the temperature dropping to 30.1° at Summerside, this being the minimum of the month. Hail fell upon several occasions and the snow that fell was quickly melted, leaving the ground almost bare throughout the greater part of the month. (L. E. Payne.)

#### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure for the month was above average from British Columbia to Manitoba and elsewhere over the Dominion it was below the average. The greatest departure above average occurred in British Columbia and it amounted to from .05 to .10 of an inch whilst Ontario and Quebec gave the largest deficiency from average, ranging from .06 to .10 of an inch.

#### HIGH AREAS.

The high areas increased in importance as the month advanced; they all first appeared either near the Pacific Coast or the extreme North-west Territories, moved southeastward diminishing in intensity as they approached the more central portions of the Continent and in several instances showed a tendency to redevelop near the Atlantic Coast.

No. 1 was a comparatively feeble area over Texas on the 1st and moved eastward to the Atlantic. No. 2 was also rather feeble and was confined chiefly to the Western States. No. 3 appeared first over Saskatchewan, moved southeast and passed off the Middle Atlantic Coast. No. 4 moved southeast from the north west States and Territories to the Middle Atlantic States and then with increasing intensity northeastward to the Maritime Provinces in advance of low area No. 2. No. 5 was a more pronounced area and brought the first very cold wave to Manitoba and the North-west Territories; it passed east and southeast with diminishing energy in rear of low area No. 2 and the cold was very moderate east of Lake Michigan. No. 6 was by far the most important high of the month, it appeared over the North west Territories on the 12th and for some five days hovered there accompanied by very low temperature; it then became somewhat broken up and moved slowly eastward and southeastward to the Lake Region and Atlantic States.

#### LOW AREAS.

No. 1. The pressure gave way rapidly over the far Western States during the 2nd and by the next morning a well defined low was centred in Arkansas; it moved with slowly increasing energy to the Middle Atlantic Coast and there suddenly developing into a severe storm, passed during the 5th northeastwards to the Gulf of St. Lawrence and then soon disappeared. Under the influence of this area from 5 to 10 inches of snow fell in Southern Ontario and Western Quebec during the 4th and heavy southeast veering to westerly gales with rain and sleet occurred in the Maritime Provinces during the 5th. No. 2. During the 5th and 6th a low moved quickly southeast from Northern Alberta to the Lower Missouri Valley and apparently during the 7th another moved northeastward from Arizona, the two forming a trough of low pressure stretching from Lake Superior to the Gulf of California. By the night of the 7th there was a well defined focus in Kansas and then with increasing energy the storm moved northeastward across the Lake Region there giving a general and heavy snowfall accompanied by strong winds. During the latter part of the 8th and during the 9th the area quickly dispersed over Quebec, and rain, while heavy in that Province, did not extend further east. No. 3. A somewhat similar doubt exists as to the origin of No. 3 as of its predecessor; during the 10th and 11th a low moved from the far North-west Territories to the Lake Region; on the morning of the 12th there were evidences of another over the Southwest States and by night there was a well defined focus in Kentucky, whence with quickly increasing energy a storm moved northeastward across the Lake Region and thence down the St. Lawrence Valley; a heavy rainfall occurred in the Dominion from Ontario eastward and easterly to southerly gales were generally prevalent during the 13th. No. 4 was very shallow, first appeared over the Lower Lake Region on the 15th and moved eastward to the Atlantic giving a light snowfall in the Southern portions of Ontario, Quebec and the Maritime Provinces. No. 5 appeared over the Southern States on the 16th and moved to the Atlantic being centred between Bermuda and the Mainland early on the 17th; it then moved northward with quickly increasing energy and on the morning of the 18th was approaching the Maritime Provinces where violent easterly gales prevailed accompanied by snow and sleet. At night the centre passed across Nova Scotia; westerly gales were reported generally, and during the 19th the storm passed beyond the range of the Weather Chart. No. 6 may be located over the extreme Southwest States on the 19th; on the morning of the 21st it

was centred in Missouri, where during the next 24 hours it moved slowly to Pennsylvania, and was here reinforced by a subsidiary from the South Atlantic States; an easterly gale with snow and ice prevailing to while in Ontario. Its subsequent movement was eastward and off the Atlantic coast, with at its close an snowstorm prevailing during the night of the 22nd in the St. Lawrence Valley, and a heavy easterly gale with sleet and rain in the Maritime Provinces, much damage being done at some points by the freezing rain. No. 7 was the most pronounced low area of the month, like several of its predecessors its origin is doubtful, but it may certainly in part be identified with a low which passed into Alberta from the Pacific on the 21st and thence passed quickly eastward across the Territories. During the evening of the 23rd it was centred over the Upper Lake Region and a trough of low pressure extended thence to the West Gulf States. By the morning of the 24th there was a well defined focus over Lake Huron, and then rapidly becoming deeper, what was now a most pronounced disturbance, moved eastward across the St. Lawrence Valley, sleet and rain with high southeast winds being in all districts followed by severe westerly gales and colder weather. No. 8 appears to have originated near the Pacific Coast, moved thence to Texas and then with increasing energy northeast and east across the Southern States, a snow storm prevailing in the Lower Lake Region while the storm centre was still in Arkansas and Georgia. No. 9 appeared over British Columbia on the 27th and moved across the Canadian North-west Territories unaccompanied by precipitation, it was ultimately absorbed in No. 8 of which the subsequent movements early in March will be mentioned in the Review for that month.

### WINDS.

In the North-west Territories and Manitoba there was a decided preponderance of North-westerly and westerly winds but in the Lake Region generally north-easterly and easterly winds were of frequent occurrence, and it is doubtful whether in some localities they did not predominate. To the eastward of this again, westerly winds were more persistent and south-westerly winds prevailed at Montreal and westerly at Quebec, Father Point and stations in the Maritime Provinces. The winds seldom reached the force of a gale over the western portions of the Dominion; but in the Lake Region gales occurred on several days and in the Maritime Provinces there were five heavy gales. Ample warning by means of bulletins and storm warnings was given of all the storms which occurred in the Maritime Provinces and on one occasion warning signals were displayed and no storm ensued.

### BRIGHT SUNSHINE.

Bright sunshine was in excess of the average in nearly all parts of the Dominion except the Maritime Provinces where there was a decided deficiency. The departure from the average was small in British Columbia being an amount equal to but two per cent of the possible; in Manitoba and the North-west Territories the departures varied from +0.3 at Battleford to +0.6 at Indian Head and in Ontario from +0.2 at Toronto to 0.10 at Lindsay.

### TEMPERATURE.

Temperature was above average in British Columbia, Quebec, the Maritime Provinces and the extreme eastern portion of Ontario, and below everywhere else. The greatest departure above average occurred in Cape Breton and Prince Edward Island, amounting to 7°, and the largest deficiency was reported at Prince Albert, amounting to 8°. In Manitoba, Winnipeg was 5° below average; whilst in Northern Ontario, Port Arthur was 5° below, and in Southern Ontario, Port Stanley was 3° below.

*The Highest and Lowest Temperature in each Province during February, 1900, were:*

British Columbia,	58.0 on 28th at Agassiz.	26.0 on 14th at Barkerville, Quesnelle Forks and on 23rd at Chilicoten.
North-west Territories,	54.0 on 24th at Calgary.	44.5 on 9th at Prince Albert.
Manitoba,	37.8 on 22nd at Treherne.	42.3 on 9th at Minnedosa.
Ontario,	61.0 on 9th at Windsor.	50.5 on 1st at White River.
Quebec,	47.0 on 13th at Brome.	28.0 on 2nd at Brome.
New Brunswick,	50.8 on 25th at St. Stephen.	29.0 on 3rd at Fredericton and Chatham.
Nova Scotia,	54.0 on 2nd at Port Hastings.	44.0 on 17th at Truro.
Prince Edward Island.	47.0 on 26th at Hamilton.	39.4 on 27th at Summerside.

### PRECIPITATION.

Precipitation was below average throughout British Columbia, but elsewhere over the Dominion it was above average, except the north shore of Lake Superior, and locally in the North-west Territories and Manitoba. In many portions of Ontario, Quebec and the Maritime Provinces the average amount was exceeded by from two to three inches. In British Columbia and the Maritime Provinces the precipitation was largely rain, but in

the other portion of Canada it was chiefly snow, several of the falls being decidedly heavy. On the last day of the month over the greater portion of Ontario the depth of snow on the ground was from 20 to 26 inches, and in Quebec and Northern New Brunswick it was from 20 to over 30 inches. Owing, however, to the heavy snow storm which was in progress, the amount of snow on the ground on the 28th was considerably increased on March 1st over that on Ontario and in Quebec. In the Qu'Appelle Valley the snow was 24 inches deep, but in the Territories and Manitoba generally it was from 2 to 14 inches in depth.

#### THICKNESS OF ICE.

NORTH-WEST TERRITORIES AND MANITOBA. — Battleford, 24 inches; Medicine Hat, 20 inches; Swift Current, 30 inches; Minnedosa, 30 inches; Brandon, 38 inches.

ONTARIO. — Port Arthur, 30 inches; White River, 24 inches; Percy Sound, 24 inches; Southampton, 12 inches; Port Stanley, 6 inches; Kingston, 14 inches; Bissett, 18 inches; Lakesfield, 17 inches; Paris, 18 inches; Hamilton, 13 inches; Barrie, 16 inches; Ottawa, 20 inches; Winton, 14 inches; Sparrow Lake, 23 inches; Orillia, 18 inches; Durham, 15 inches; Port Dover, 16 inches; Stratford, 18 inches; Gravenhurst, 18 inches.

MARITIME PROVINCES. — Chatham, 24 inches; Yarmouth, 10 inches; Charlottetown, 14 inches; Sydney, 6 inches; Fredericton, 24 inches.



# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, FEBRUARY, 1900.

a Barometer not reduced to Sea Level. \* Stations not furnished with Registering Thermometers

STATION.	Latitude N.	Longitude W.	Elevation above Sea Level, in feet.	PRESSURE.			TEMPERATURE.			DIRECTION OF WIND FROM			VELOCITY OF WIND.			PRECIPITATION.			No. of Thunder storms.	No. of Auroras.	Days with 1/4 or more of Fall.	No. of Fog.																
				Mean reduced.	Highest.	Lowest.	Range.	Mean.	Difference from average.	Years observed.	Highest.	Date.	Lowest.	Date.	Mean daily range.	Mean temperature of month.	Mean relative humidity.	Mean amount of cloud.					No. of days completely clouded.	N.	N.E.	E.	S.E.	S.	W.	N.W.	C.	Total number of hours.	Mean miles per hour.	Highest days velocity.	Date and direction from.	Amount.	Difference from Average.	In month.
BRITISH COLUMBIA:																																						
Victoria	48° 21' N.	123° 16' W.	140	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Esquimalt	48° 31' N.	123° 16' W.	140	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Abbotsford	49° 05' N.	122° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Port Simpson	54° 31' N.	123° 16' W.	140	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Revelstoke	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Princeton	50° 41' N.	115° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Island Bay	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Kilmer Lake	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Stuart's Lake	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Fraser's Creek	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Griffin Lake	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Verdon	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Kaiser Island	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Quilley	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Madaw	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Island	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Nimble Lake	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
W. J. Kennedy	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.	117° 10' W.	160	30.07	30.8	29.4	0.90	40.8	13.5	15.8	11	25	25	75	25	65	85	55	55	55	55	5	22.1	6.8	10.8	10.8	10.8	1										
Chilmer	51° 05' N.																																					







PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING  
FEBRUARY, 1900.

STATIONS.	RAIN.					SNOW.				
	Amount in inches.	Days of Fall.	No. of Fall Days.	Height Fall in Month.	Days.	Amount in inches.	Days of Fall.	No. of Fall Days.	Height Fall in Month.	Days.
<b>BRITISH COLUMBIA.</b>										
Vancouver, .....	5.28	20	6	0.91	27	8.7	7	1	1.0	10
Royal Oak, .....	2.75	14	12	0.46	27	3.7	3	1	0.0	26
Cumbyland, .....	3.23	7	19	0.03	24	10.0	4	1	0.0	17
Nanaimo, .....	3.63	8	17	0.80	17	6.0	3	1	0.0	13
Goldstream Lake, .....	3.22	16	9	0.50	28	13.0	3	1	0.0	16
Alberni, .....	3.60	14	10	0.64	27	12.7	3	1	0.0	8
Nass Harbour, .....	7.95	9	12	2.90	3	20.9	7	1	8.0	19
Hailey, .....	1.43	14	11	0.89	27	8.0	7	1	1.0	10
<b>N. W. TERRITORIES.</b>										
Saltcoats, .....						3.6	6	1	0.0	19
Coates, .....						3.2	2	1	0.0	7
N. E. Beaver Hills, .....						17.3	12	1	0.0	11
Humstall, .....						5.7	6	1	0.0	16
Strathcona, .....	0.20	1	13	0.20	4	12.8	14	1	0.0	2
<b>MANITOBA.</b>										
Norquay, .....						6.5	7	1	2.0	19
Hartney, .....						6.5	4	1	2.0	19
Oakbank, .....						1.9	6	1	0.0	32
Sheep Lake, .....							1	1	0.0	22nd.
Belmont, .....							6	1	0.0	
Morden, .....						2.0	4	1	2.0	18
<b>ONTARIO.</b>										
Cherry Valley, .....	2.69	7	14	0.80	12	22.0	8	1	0.0	4
Robbins Mills, .....	1.00	2	22	0.65	8	9.0	4	1	3.0	28
Sparrow Lake, .....	1.12	3	14	0.80	8	38.9	13	1	11.0	2
Uxbridge, .....	0.27	2	18	0.27	12-13	31.5	8	1	7.0	21, 22, 23
Lansdowne, .....	0.94	3	20	0.48	22	5.0	5	1	4.0	4
Ardur, .....	2.15	6	16	0.48	9	16.0	8	1	5.0	5
Watford, .....	1.73	3		0.68	12			1	18.0	28
Goderich, .....	2.50	2	18	1.50	8	29.0	8	1	6.0	25
Wyoming, .....	0.10	1	21	0.10	13	22.0	6	1	8.0	28
Midland, .....	2.40	3	16	1.05	8	29.0	9	1	10.0	21
Georgetown, .....	1.62	5	10	0.76	13	36.0	15	1	9.7	28
Scarboro', .....	3.64	9	14	1.40	22	13.5	7	1	5.0	28
Oliver's Ferry, .....	0.82	1	9	0.52	13	16.0	5	1	9.0	4
Orangeville, .....	1.97	4	16	1.05	8	12.7	8	1	12.2	23
Warton, .....	2.10	3	18	1.10	12	23.0	9	1	6.0	2
Wooden, .....	1.56	6	18	0.50	9	18.0	10	1	7.0	22
Emsdale, .....	3.93	4	15	2.00	7	16.5	11	1	6.0	24
Jennyns, .....	0.75	2	20	0.50	9	39.0	5	1	16.0	22
Panna, .....	3.94	5	14	0.95	9	35.5	10	1	12.0	25
Port Barwell, .....	2.81	5	17	1.15	8	33.0	6	1	14.0	25
Montague, .....	2.33	4	8	1.31	13	8.0	4	1	4.0	4
Lyndoch, .....	2.74	4	9	1.42	13	33.7	5	1	14.0	4
Sunshine, .....	1.50	4	16	0.63	9	28.0	15	1	4.0	28
Princeton, .....	1.43	4	15	0.75	8	50.0	9	1	12.0	4
Aurora, .....	1.04	4	13	0.67	8	26.9	12	1	12.8	22
Wilton Grove, .....	1.27	3	18	0.82	13	16.0	7	1	13.0	4
Hardsville, .....	1.75	4	17	1.75	8	21.5	10	1	5.0	22
Lion's Head, .....	1.92	3		1.21	7					
Dutton, .....	2.88	5	18	1.26	8	38.5	7	1	20.0	28
Kitley, .....	2.01	4	18	1.00	13	48.0	6	1	8.0	4
Croydon, .....	1.70	2	24	0.90	8	34.0	5	1	12.0	4
Freshwater, .....	2.94	3	13	2.00	8	49.0	12	1	26.0	22
Providence Bay, .....	2.00	2	15	2.00	7-8	25.0	12	1	7.0	25
Deer Park, .....	2.11	5	17	1.04	23	36.0	8	1	18.7	28
Emmetsburg, .....	0.50	2	21	0.30	12	33.0	5	1	12.0	22
Dealtown, .....	2.66	10	14	0.75	3	24.4	9	1	10.0	28
<b>NEW BRUNSWICK.</b>										
Point Beaubien, .....	1.42	6	18	0.71	14	1.1	7	1	0.8	19
<b>NOVA SCOTIA.</b>										
Port Morden, .....	1.89	4	24	0.67	5	9.5	4	1	4.0	18
<b>P. E. ISLAND.</b>										
Mount Stewart, .....	2.44	3	24	1.05	25	1.3	4	1	1.7	11
Murray River, .....	1.62	6	22	0.42	4	8.0	3	1	4.0	22

*Aurora records.*

Where the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the feeblest in brilliancy.

1. Savanne, Pembina Crossing, IV.
2. Savanne.
3. Savanne, Belmont, Battleford, II ; Minnedosa, IV.
4. Savanne, Aweme, II ; Cannington Manor, Qu'Appelle, Swift Current, III ; Barnardo, II ; Oonikup, Strathcona, III ; Tagish, III ; Red Deer, III.
5. Savanne, Battleford, IV ; Minnedosa, IV.
6. Savanne.
9. Pembina Crossing, II ; Minnedosa, IV ; Channel Island, IV.
10. Minnedosa, IV.
15. Gravenhurst, IV.
17. St. Anne de la Pociatière.
20. Savanne, Aweme, IV ; Medicine Hat, IV ; Barnardo, IV ; Red Deer, III ; Tagish, II.
21. Medicine Hat, IV ; Minnedosa, IV.
22. Battleford, III.
23. Hillview, III ; Aweme, IV ; Barnardo, II.
24. Red Deer, IV.
25. Savanne, Battleford, IV ; Oonikup, Red Deer, IV ; Channel Island, IV.
26. Treherne, IV ; Hillview, IV ; Aweme, IV.
27. Minnedosa, IV ; St. Anne de la Pociatière, IV.



PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN  
WAS ABOVE THE HORIZON IN THE MONTH OF FEBRUARY, 1900.

	HOURS ENDING															
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria.....			0 00	0 11	0 29	0 30	0 33	0 33	0 27	0 28	0 28	0 26	0 03			
Kuper Island.....			0 00	0 00	0 28	0 30	0 29	0 28	0 28	0 31	0 37	0 34	0 14			
Agassiz.....			0 00	0 00	0 09	0 19	0 27	0 36	0 34	0 34	0 28	0 25	0 09			
Battleford.....			0 00	S	0 29	0 46	0 57	0 53	0 66	0 62	0 56	0 39	0 06			
Indian Head.....			0 05	0 36	0 47	0 49	0 60	0 50	0 54	0 55	0 52	0 34	0 03			
Brandon.....			0 21	0 53	0 58	0 68	0 66	0 63	0 55	0 56	0 49	0 15	0 00			
Winnipeg.....			0 00	0 12	0 45	0 63	0 71	0 69	0 65	0 63	0 57	0 45	0 28	0 61		
Durham.....			0 00	0 05	0 06	0 12	0 17	0 26	0 35	0 32	0 26	0 20	0 03			
Woodstock.....			0 00	0 08	0 16	0 41	0 45	0 43	0 46	0 42	0 50	0 45	0 28			
Toronto.....			0 00	0 03	0 34	0 46	0 47	0 44	0 40	0 46	0 47	0 43	0 35	0 09		
Lindsay.....			0 00	0 12	0 33	0 45	0 56	0 53	0 52	0 48	0 49	0 44	0 42	0 20		
Barrie.....			0 02	0 15	0 28	0 33	0 45	0 47	0 53	0 47	0 35	0 35	0 09	0 00		
Kingston.....			0 02	0 21	0 43	0 41	0 45	0 53	0 50	0 51	0 46	0 43	0 21			
Ottawa.....			0 00	0 14	0 34	0 38	0 46	0 55	0 53	0 53	0 45	0 41	0 15			
Montreal.....			0 00	0 08	0 30	0 36	0 40	0 51	0 56	0 56	0 51	0 45	0 13			
Fredericton.....			0 20	0 41	0 44	0 49	0 46	0 39	0 40	0 40	0 38	0 26	0 01			
	Victoria.	Kuper Island.	Agassiz.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Durham.	Woodstock.	Toronto.	Lindsay.	Barrie.	Kingston.	Ottawa.	Montreal.	Fredericton.
Mean proportion for month..... (Constant sunshine being 1.)	0 24	0 26	0 21	0 42	0 39	0 48	0 49	0 17	0 34	0 37	0 44	0 34	0 40	0 38	0 44	0 37
Difference from average.....	+ 0 02	+ 0 03	0 00	0 03	0 06	0 04	+ 0 02	- 0 06	+ 0 02	0 10	0 08	0 05			0 02	0 07
Maximum daily amount.....	0 88	0 88	0 80	0 95	0 80	0 91	0 88	0 60	0 91	0 90	1 00	0 85	0 95	0 88	0 99	0 90
Date.....	13	11	15	16	25	25	13	27	27	26	26	26	26	27 14	27	27
No. of days completely clouded.....	8	13	14	3	5	6	4	12	10	9	8	8	10	7	8	9

## FORECASTS FOR FEBRUARY, 1900.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in the Territory at 11 hours beginning at 7 a.m. the following day.

The following table shows the forecasts for the month were 794. These were divided as follows:

Forecasted.	No.				Percentage.
	Fully.	Partly.	Not.	Not.	
Manitoba	75	6	1	1	90.6
Lake Superior	79	69	13	6	84.2
Lower Lake Region	97	74	11	12	82.0
Georgian Bay	98	75	11	12	82.4
Ontario & N. Bay	89	75	5	9	87.4
Upper St. Lawrence	88	79	13	5	86.9
Lower St. Lawrence	90	73	16	7	85.6
Gulf	88	71	11	6	86.9
Maritime Provinces	99	69	19	11	82.2
Total	794	632	89	73	85.2

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

SUMMARY OF THE TEMPERATURE CONDITIONS WHICH PREVAILED AT DAWSON CITY, YUKON TERRITORY,  
FROM 1ST MAY, 1899 TO 28TH FEBRUARY, 1900.

May, 1899—Frost on nine nights, minimum 17° on the 3rd, maximum temperature above 70° on eight days, highest 85° on the 31st.

June, 1899—No frost, minimum 39° on the 1st, mean maximum 73.5°, highest 90° on the 28th.

July, 1899—No frost, minimum 39° on the 30th, maximum over 90° on four days, highest 95° on the 9th, mean maximum 81°.

August, 1899—Frost on the 29th, minimum 30°, maximum 87° on the 2nd.

September, 1899—Frost of frequent occurrence, minimum 24° on the 24th, maximum 79° on the 2nd.

October, 1899—One night only without frost, seven nights below zero, —10° on the 18th and 19th, seven days with maximum above the freezing point, highest 62° on the 6th.

November, 1899—Seven nights below zero, minimum —15° on the 12th, maximum 30° on the 1st.

December, 1899—Five nights only with minimum temperature above zero, thirteen nights more than 30° below; lowest, —50° on the 30th, maximum temperature 18° on the 5th, mean minimum —21°, mean maximum +13°, mean temperature —17°.

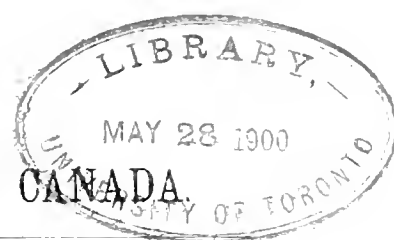
January, 1900—Mean minimum temperature —29°, lowest temperature —56° on the 16th, maximum above zero on four days, highest 7° on the 31st, mean maximum —16°, mean temperature for the month —22.5°.

February, 1900—Mean minimum temperature —16°, lowest temperature —44° on the 21st, mean maximum temperature —2°, highest temperature 19° on the 26th, mean temperature for the month —9°.

R. F. STUPART,

Meteorological Office, Toronto,  
26th March, 1900.

Director.



# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

MARCH, 1900.

No. 3

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraph reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

With the exception of unusually low temperature and most prolonged cold in Ontario and Quebec, the mild weather in British Columbia and the south-western portion of the North-west Territories, and the large amount of precipitation in portions of Nova Scotia, the weather in Canada was almost featureless. In the eastern portion of the country, the arrival of migratory birds and other signs of spring were much delayed, whilst in the western portion they were exceptionally early.

In British Columbia there was much fine and exceptionally mild weather, the temperature being considerably above average, and the maximum exceeding 70° at several stations. To this mild weather was added a plentiful supply of rain which quickly melted the snow on the mountains and hastened vegetation, so that in some districts early spring flowers had bloomed and withered by the 31st. On Vancouver and the Gulf Islands swallows arrived on the 20th, and most fruit trees were in bloom by the 31st.

The mild weather of British Columbia was extended to the south-western portion of the North-west Territories, chinook winds setting in about the 9th, when the snow upon the ground was quickly melted and the weather became decidedly spring like. In Saskatchewan and Assiniboia this unusually mild weather did not last, though it again turned milder on the 21st and continued so to the end of the month. At some places temperatures above 60° were recorded, which were in striking contrast with 30° below zero and lower earlier in the month. Some rain occurred at a few places on or about the 23rd, but with this exception, the precipitation, which was about average, was snow. In southern and southwestern districts the snow had practically gone by the 31st, and ploughing and seeding was almost over by that date, many migratory birds having also arrived. In more northern districts the weather was not so spring like, but the conditions were normal.

In Manitoba the weather conditions did not differ much from the normal, the precipitation, however, was somewhat below the average. The temperature only reached 50° at one station and was generally about average, nevertheless the snow in the open country had almost gone by the 31st, and ploughing had commenced. Wild geese were seen at Russell on the 29th, and many migratory birds were reported before the 31st.

The weather in Ontario was characterised by low mean temperature, with rapid changes during the month. The precipitation was average in most districts, but at some stations near Lakes Erie and Ontario it exceeded the average; this was doubtless owing to the heavy fall of snow which commenced upon February 28th and continued to the 2nd of March, when from 18 to 22 inches was recorded at some places. The maximum temperatures were generally between 40° and 50°, and only exceeded the latter figure at six stations. Temperatures well below zero were recorded at most stations. Although there was much bright sunshine there were few signs of spring, and in northern districts there was good sleighing up to the 31st. A few migratory birds were noted late in the month. Owing to the gradual rise in temperature no flooding occurred.

In the Province of Quebec the weather was unusually cold and stormy, the precipitation also exceeding the average. The maximum temperatures at the several stations were generally between 40° and 50°, the latter figure being reached at only one station; and the minimum temperatures reported were well below zero —35·5° being registered at Richmond on the 1th. A severe gale occurred on the 1st, a wind velocity

of 70 mile per hour being recorded at Quebec, and at or about the date heavy snow fell 21 inches falling at that city in two days. During the last week of the month the weather was fine and comparatively mild, but there was little sign of approaching spring.

The weather in New Brunswick was typical of March excepting during the first and last few days of the month when there were strong wind and gale, 72 mile per hour being recorded at St. John on the 2nd. At this date heavy snow fell turning to sleet in northern districts. Maximum temperatures exceeding 50° occurred at four stations, but at most places temperatures well below zero occurred on or about the 6th. A few birds were noted on the 31st, and the ice was breaking up in the St. John River, but with these exceptions there were few signs of spring.

In Nova Scotia the weather varied with the district, it being generally colder than usual in the northern portion and somewhat milder than usual in the southern districts. The precipitation was also considerably above average at nearly all stations, snow falling for the most part in Cape Breton and rain in the more southern districts. Temperature below zero occurred only at one station, namely Parr-boro, and maximum temperatures above 50° were recorded at several stations. A severe gale occurred on the 2nd when a velocity of 55 mile per hour was registered at Halifax. A few migratory birds were noted late in the month.

In Prince Edward Island the weather was almost normal, there were, however, some unusually heavy storms more especially during the early and latter part of the month. There were several heavy falls of snow, which soon melted however, and on the 31st the ground was almost bare. Temperature below zero occurred at one station only, and maximum temperatures about 48° were recorded at most stations. The harbour at Charlottetown was open unusually early. F. E. FAYNE.

#### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was from 0.05 to 0.11 of an inch above the average in the North-west Territories and Manitoba, average or slightly above in Ontario and Eastern British Columbia, and average to 0.05 of an inch below in Quebec, the Maritime Provinces and Western British Columbia.

#### HIGH AREAS.

Nine areas of high pressure were chartered during the month, the larger number being of a well marked type.

No. 1 was a moderate area which between the 1st and 4th travelled over the Central States and passed off the South Atlantic Coast. No. 2 hovered over the North-west Territories from the 1st until the 4th and then passed quickly far north over Canada to the Gulf of St. Lawrence. It was accompanied by some decidedly cold weather throughout its course: even in southern Ontario the temperature fell below zero. No. 3 travelled between the 6th and 8th from the north-west States a little south of the Lake Region and off the coast of Connecticut. During its presence the weather was very fine in Canada from the Lake Region to the Maritime Provinces. No. 4 appeared in the North-west Territories on the 8th and afterwards passed slowly over the Lake Region reaching the Atlantic Coast on the 13th. It was attended by cold weather throughout its course and in the northern portion of the Ottawa valley -32° was recorded. No. 5 was of great importance in the North-west Territories where it hovered between the 14th and 17th accompanied by very cold weather, except in Alberta, and then dispersed. Owing to its influence the weather kept decidedly cold in Ontario and Quebec. No. 6 was seemingly an offshoot of No. 5. It was centered in Kansas on the 16th and continuing in its south-easterly course it passed off the South Atlantic Coast on the 18th. No. 7 was a moderate area which passed into the North-west Territories during the night of the 18th, and thence quickly south-easterly reaching the South Atlantic Coast on the 22nd. No. 8 travelled from the North Saskatchewan Valley to the Georgian Bay region between the 22nd and 25th and then dispersed. During its presence temperatures below zero were recorded in the North-west, in northern Ontario, and in Quebec. No. 9 was situated in the North-west Territories from the 26th until the 29th, and it then passed southwardly to the Lower Mississippi Valley. It was not attended by any very low temperatures.

#### LOW AREAS.

No. 1 was situated in Texas on the 27th of February and by the following morning had reached Tennessee. On the morning of March 1st it was centered near Washington, D.C., and then travelled in a more northerly course and between the 2nd and 3rd passed to the Province of Quebec and to the north-ward of the Gulf of St. Lawrence. It was an important area throughout causing a snowstorm of unusual intensity over Ontario and Quebec and a gale of great violence over the Maritime Provinces attended by snow and rain. No. 2 formed over Texas on the 5th, moved over the Lake Region on the 6th, as an important storm, then with diminishing energy to the Gulf of St. Lawrence. It caused heavy rain and snow from the lakes to the

Maritime Provinces together with strong winds and gales. No. 3 moved into British Columbia on the 6th and 7th accompanied by rain. Between the 7th and 9th it travelled with much rapidity as a minor depression over the Dominion to the Gulf of St. Lawrence bringing some light local snow-falls, more especially in the North-west Territories and in the northern portion of the Lake Region. No. 4 was first shown off the Florida Coast on the 9th. It passed up the Gulf Stream its centre skirting the Nova Scotian Coast on the 10th. Owing to its influence there was a fall of snow over Quebec and northern New Brunswick, and rain in the southern portion of the Maritime Provinces, the winds at the same time increasing to gales locally. No. 5 moved into the North-west Territories on the 11th, for several days prior to this it had hovered over British Columbia. From the North-west Territories it travelled south-easterly over the Lake Region, and on the 14th became merged in No. 6 which was then passing up the Atlantic. No. 6 appeared near Bermuda on the 12th, and on the 14th passed into and over the Maritime Provinces accompanied by heavy falls of snow and rain together with moderate local gales. No. 7 appeared over Texas on the 14th. It passed along the northern coasts of the Gulf of Mexico to the South Atlantic States, then rapidly north-north-east reaching the Lower St. Lawrence Valley on the night of the 16th. It was an important area and brought a gale of wind throughout eastern Canada attended by snow and rain in Quebec and northern New Brunswick and by rain in southern localities. No. 8 moved into Manitoba from the North-west during the night of the 16th attended by a moderate snowfall, it remained in the vicinity of Manitoba until the 18th and then as a depression of considerable importance traversed the Lake Region and then St. Lawrence Valley to the Gulf bringing occasional snow and rain from the lakes to the Maritime Provinces together with strong winds and gales from the south and west. The gales however were chiefly confined to eastern Canada. No. 9 was a moderate depression which appeared in British Columbia on the 19th and afterwards passed far north over Canada reaching the Gulf of St. Lawrence on the 23rd. It caused a few showers of rain or snow in northern Ontario also in Quebec and the Maritime Provinces. Nos. 10 and 11 were both shallow depressions, the former travelled from the western States to the Lower Lakes and thence off the New England Coast and skirted the Nova Scotian Coast. The latter formed over Alabama and Georgia on the 25th, and joined No. 10 on the 27th. During the presence of the depressions there were light snowfalls in the Lake Region and the Maritime Provinces. No. 12 was situated over Colorado on the 27th and passing over the Central States it reached the North Carolina Coast on the 30th. It then travelled north-east some distance off the United States Coast and on the morning of the 1st April it was situated off the Cape Breton Coast as a severe storm the barometer reading in its centre being 28.80. It caused a gale over the Maritime Provinces accompanied by snow, both the gale and snowstorm being heaviest in the eastern portion.

### TEMPERATURE.

The mean temperature of the month was lower than average by three to six degrees in the Provinces of Quebec and Ontario, the largest departures being in the Upper Ottawa Valley and in the Nipissing District. In British Columbia and Southern Alberta it was higher than average by a corresponding amount, while in Manitoba and the larger portion of the Territories, and also in the Maritime Provinces it varied from just average to a degree or so either above or below. The difference from average of six degrees in Ontario is large, but scarcely as exceptional as many seem to suppose. In March, in the years 1895 and 1896, the mean temperature over the larger portion of the Province was lower than this year, and in 1885 it was very much lower. The British Columbia records indicate, however, that a departure from average of six degrees in that Province is very exceptional.

#### *The Highest and Lowest Temperature in each Province during March, 1900, were:*

British Columbia,	77.0 on 31st at Agassiz.	11.0 on 8th at Bullion.
North-west Territories,	66.0 on 11th at Swift Current.	37.0 on 4th at Prince Albert.
Manitoba,	50.0 on 30th at Portage la Prairie.	20.0 on 4th at Minnedosa.
Ontario,	55.0 on 31st at Biscotasing.	44.0 on 15th at White River.
Quebec,	50.0 on 20th at Point des Monts.	36.8 on 6th at Chicoutimi.
New Brunswick,	59.0 on 2nd at Dalhousie.	23.0 on 6th at Dalhousie.
Nova Scotia,	58.0 on 21st at Wolfville.	9.0 on 6th at Parrsboro.
Prince Edward Island,	48.5 on 21th at Hamilton.	0.6 on 6th at Charlottetown.

### PRECIPITATION.

In British Columbia the precipitation was, in most localities, unusually heavy, especially in the Lower Fraser Valley, where it ranged between 6 and 10 inches. At Victoria over 2 inches fell between the 9th and 11th, and 5 to 6 inches in 36 hours was reported from Vancouver and New Westminster on the 10th and 11th. In the North-west Territories and Manitoba the precipitation was, as is usual in March, wholly snow. This, during the first ten days, was fairly heavy in Northern Alberta and also in parts of Assiniboia, amounting

to 34 inches at Edmonton, 14 inches at Qu'Appelle, and 19 at Medicine Hat. In Manitoba, generally, it was about 7 inches, and in Saskatchewan a somewhat smaller amount. From Ontario eastward a much heavier precipitation occurred in the southern than in the northern portion of the Province. In Ontario it was partly snow and partly rain; in Quebec chiefly snow, and in the Maritime Provinces almost wholly rain. In Eastern Nova Scotia the total fall was double the average. At the close of the month the depth of snow on the ground was still considerable in Northern Ontario and in Quebec, but all had nearly gone from the North-west Territories and Manitoba, and also from Southern Ontario; there were, however, still heavy drifts in sheltered places.

#### WINDS.

The westerly clinook was much in evidence in Southern Alberta, but in the northern portion of that Territory, easterly winds preponderated. From Manitoba eastward westerly and north-westerly winds were decidedly in excess of winds from other directions, except perhaps in Northern Ontario where easterly winds were of frequent occurrence.

An unusually heavy gale with snow prevailed in the St. Lawrence Valley on the 1st, and in the Maritime Provinces on the 2nd; north-east 70 miles per hour was recorded at Quebec; east 72 miles was recorded at St. John, and 52 miles per hour from the east at Halifax. Other more moderate gales occurred in Ontario on the 6th; in Quebec and the Maritime Provinces on the 16th, and in the Maritime Provinces on the 19th and 31st. Good warning of the approach of these storms was given in each case, except that on the 31st, when storm signals should have been but were not displayed in Nova Scotia.

#### BRIGHT SUNSHINE.

The amount of bright sunshine registered in British Columbia differed little from the average, and in the North-west Territories and Manitoba all stations show a small deficiency. In Ontario the record was everywhere slightly in excess of average, and eastward in Quebec and the Maritime Provinces the excess was greater than in Ontario.

# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, MARCH, 1900.

α Barometer not reduced to Sea Level      \* Stations not furnished with Registering Thermometers

STATION.	Latitude N.	Longitude W.	PRESSURE.			TEMPERATURE.			No. of days complete.	DIRECTION OF WIND FROM						VELOCITY OF WIND.			PRECIPITATION.			No. of Fair days.	No. of Thunder storms.	No. of Foggy.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
			Mean reduced.	Highest.	Lowest.	Range.	Mean.	Difference from average.		Years observed.	Highest.	Falls.	Lowest.	Date.	Mean daily range.	Mean temperature of day.	Mean relative humidity.	Mean amount of cloud.	No. of days cloudy.	DIRECTION OF WIND FROM						Total number of hours.	Mean miles per hour.	Highest days velocity.	Date and direction from.	Amount.	Difference from Average.	In month.	Days with 1/4 or more in month.	No. of Autumns.	No. of Winter storms.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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TEMPERATURE, AND PRECIPITATION AT STATIONS IN THE BASIN OF CANADA MARCH, 1901.

mm. Diameter not reduced to sea level. \* Stations not furnished with Register. Thermometers.

[illegible]





PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, MAY 1954

a Parameter not reduced to sea level. \* Stations not furnished with registering thermometers.

[illegible]

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING  
MARCH, 1900.

STATIONS.	RAINFALL.					SNOWFALL.				REMARKS.
	Amount in inches.	Days of Over.	No. of Fair Days.	Heaviest Fall in Month.	Date.	Amount in inches.	No. of Days.	Heaviest Fall in Month.	Date.	
<b>BRITISH COLUMBIA.</b>	in.			in.		in.		in.		
Cumberland .....	9.76	17	14	2.34	10	1.5	2	1.0	7	20th, thunder-storm.
Nanaimo .....	7.97	10	21	4.31	8 10					
Royal Oak .....	5.41	15	16	1.29	9					
Vancouver .....	9.95	15	11	5.97	9 10					25th, hail-storm.
Goldstream Lake .....	12.61	17	14	5.96	9 10					
Vancouver (2) .....	9.74	15	16	6.37	8 10					continuous rain (0.69)
Langley .....	8.89	12	19	5.94	8 10					25th, thunder-storm.
Nasas Harbor .....	3.75	10	18	1.72	11	19.5	3	13.0	8	
<b>N. W. TERRITORIES.</b>										
Saltcoats .....						6.0	6	2.0	8	
Crescent Lake .....	0.19	1	25	0.19	27	8.8	6	2.6	4	
Beaver Hills, N. E. .....						32.0	11	11.0	23	
Conits .....						7.3	4	5.0	4	
Imms-fall .....						7.0	5	3.0	2	
Strathcona .....						16.0	10	6.5	22	
<b>MANTOBA.</b>										31st, snow all gone.
Oakbank .....	R		25	R	12	6.0	6			28th, snow all gone.
Pembina Crossing .....			22				9			
Hartney .....			28			4.5	3	3.0	17	
Morden .....			30			4.0	1	4.0	25	
Norquay .....			26			11.0	5	3.0	1	31st, Snow gone.
Rapid City .....			28			5.0	3	2.0	17	30th, Snow gone.
Belmont .....			25				6			
<b>ONTARIO.</b>										
Jerny .....						9.0	1	9.0	1	
Arden .....	0.45	1	17	0.23	10	24.0	10	6.0	1	
Georgetown .....	0.68	1	12	0.39	6	19.6	16	5.3	1	
Midland .....	0.50	2	26	0.40	19	6.0	5	3.0	2	
Goderich .....	2.49	3	23	1.50	6	16.0	8	4.0	18	
Dealtown .....	0.97	1	18	0.73	6	12.1	9	6.0	1	
Oliver's Ferry .....	0.15	1	26	0.15	6	25.0	5	16.0	1	
Watford .....	1.28	2		1.10	18					
Wyoming .....	0.40	2	25	0.20	9	10.0	4	3.0	17	
Orangeville .....	0.48	1	22	0.48	20	15.9	9	5.1	6	
Aurora .....	0.14	2	23	0.08	19	15.6	7	4.5	1	
Ensdale .....	0.57	2	12	0.13	19	18.0	17	4.0	6	
Port Burwell .....	0.96	2	23	0.75	6	28.0	7	8.0	5	
Wilton Grove .....	2.01	1	21	1.29	6	17.0	6	8.0	1	
Scarboro' .....	0.96	1	22	0.50	5	18.5	9	10.0	1	
Wooler .....	0.47	1	24	0.36	6	23.0	7	8.0	1	
Cherry Valley .....	0.47	1	25	0.17	5	17.0	6	7.0	17	
Cowall .....	0.90	2	24	0.80	5	13.0	7	4.0	1	
Parma .....	1.10	2	20	0.83	6	11.0	9	12.0	1	
Lansdowne .....	0.68	1	24	0.68	7	27.0	6	16.0	2	
Elgin .....						37.0	8	24.0	1 2	
Warton .....	0.24	1	25	0.24	19	15.5	6	6.0	6	
Kitley .....	0.60	2	24	0.55	20	31.5	5	22.0	1	
Montague .....						18.0	5	13.0	1 2	
Roblins Mills .....						33.0	3	20.0	1	
Ursa .....	1.51	2	23	1.00	6	11.0	6	3.0	1	
Sunshine .....	0.39	2	21	0.30	20	13.5	10	4.0	21	
Lion's Head .....	0.89	3		0.55	19					
Huntsville .....	0.45	1	27	0.45	19	9.0	1	4.0	6	
Croydon .....	1.65	2	27	0.25	19	28.0	1	16.0	5	
Deer Park .....	0.51	3	24	0.31	6	4.3	3	0.8	19	
Providence Bay .....						14.5	7	6.0	6	
Lynedoch .....	1.33	2	23	1.33	8 9	17.0	8	11.0	1 2	
Uxbridge .....						12.5	5	8.0	1	
Princeton .....	0.61	3	23	0.46	19	11.0	6	4.0	1	
<b>NEW BRUNSWICK.</b>										
Poin. Eschmiac .....	0.21	3	20	0.14	14	3.8	10	1.7	2 3	
<b>NOVA SCOTIA.</b>										
Port Morden .....	2.62	6	19	1.64	20	24.4	7	5.0	2	
<b>P. E. ISLAND.</b>										
Mount Stewart .....	2.07	5	25	0.68	12	6.0	1	6.0	31	

*Warblers.—Contd.*

*Where the starling is not taken by the owner, it is given to the brightest (IV) the pebble in the bowl.*

1. Treherne, I. Hillview, III. Lucknow, III. Pembina Crossing, III. Tagish, IV.
2. Treherne, II. Strathcona, IV. Minnedosa, IV. St. Albans, III.
3. Hillview, III. Strathcona, IV. Pembina Crossing, III. Tagish, IV.
4. Chicoutimi, Medicine Hat, IV. Minnedosa, IV.
6. Barnardo, IV.
7. Thuro, IV. Cape Magdalen, Sussex, Minnedosa, IV. Quebec, IV. St. Albans, III. Tagish, II.
12. Cunnington Manor, Moosomin, III. Montreal, I. Moose Jaw, Bndf, III. Barkerville, IV. St. Anne de la Pocatiere, II. Stuarts Lake, Pembina Crossing, IV. Tagish, II.
13. Battleford, II. Barnardo, II.
14. Barnardo, II. St. Albans, IV.
15. Barnardo, III.
18. St. Anne de la Pocatiere, IV.
19. Minnedosa, II.
23. Cockburn Island, Chicoutimi, Toronto, IV. Clontarf, IV. Georgetown, IV. Quebec, IV. Father Point, III. Tagish, III.
24. Chicoutimi.
27. Tagish, IV.
28. Rat Portage, Regina, Medicine Hat, IV. Pembina Crossing.
29. Gravenhurst, IV. Treherne, I. Chicoutimi, Strathcona, II. Battleford, IV. Quebec, IV. St. Albans. Pembina Crossing.
30. Thuro, IV. Bancroft, III. Chicoutimi, Midland, III. Minnedosa, III. St. Anne de la Pocatiere, II. Pembina Crossing.
31. Pembina Crossing.

*Appearance of Spring Birds, &c.:—*

*Robins.*—Paris, 2nd; Ridgetown, 2nd; Port Stanley, 9th; Birnam, 10th; Georgetown, 10th; Port Burwell, 10th; Cumberland, 12th; Tobacco Plains, 13th; Dealtown, 13th; Kuper Island, 13th; Calgary, 16th; Port Dover, 17th; Barkerville, 17th; London, 20th; Calgary, 20th; Princeton, 22nd; Kidley, 23rd; Welland, 23rd; Bognor, 23rd; Stony Creek, 23rd; Stratford, 24th; Toronto, 24th; Dunnville, 25th; Arden, 26th; Aurora, 26th; Stouffville, 27th; Desgronto, 27th; Gravenhurst, 27th; Point Escuminac, 27th; Lucknow, 28th; Brantford, 28th; Warton, 28th; Otomabee, 28th; Wooler, 29th; Hamilton, 30th; Collingwood, 30th; Montague, 30th.

*Crows.*—Wyoming, 4th; Bognor, 6th; Lucknow, 8th; Birnam, 8th; Erasmus, 9th; St. Stephen, 10th; Wooler, 10th; Brone, 10th; Orillia, 19th; Chilcote, 10th; Gravenhurst, 10th; Stratford, 11th; Warton, 12th; Halburton, 12th; Arden, 12th; Durham, 13th; Meaford, 14th; Bancroft, 15th; Whiteside, 17th; Fredericton, 17th; Clontarf, 18th; Lakelfield, 19th; Barrie, 20th; Beatrice, 21st; Calvin, 22nd; Cunnington Manor, 22nd; Pembina Crossing, 26th; Dunnville, 27th; Brandon, 30th; Barnardo, 28th; Rapid City, 29th.

*Chipping Sparrows.*—St. Stephen, 10th; Muskowpetung, 22nd.

*Ducks.*—Cutts, 9th; Calgary, 15th; Red Deer, 17th; Chaplin, 20th; Kneehill, 20th; Muskowpetung, 22nd; Hillview, 23rd; Pembina Crossing, 27th; Point Escuminac, 30th; Barnardo, 30th.

*Blackbirds.*—Muskowpetung, 22nd; Birnam, 27th; Ridgetown, 28th; Welland, 30th; Montague, 30th; Brantford, 31st.

*Grosbeaks.*—Peterborough, 13th.

*Gull.*—Gravenhurst, 28th; Percé, 30th.

*Woodpeckers.*—Port Dover, 17th.

*Thrushes.*—Meaford, 8th.

*Meadow Lark.*—Ridgetown, 2nd; Chilcote, 12th; Georgetown, 27th.

*Bluebirds.*—Cumberland, 10th; Port Dover, 17th; Chaplin, 20th; Ridgetown, 22nd; Stony Creek, 23rd; Red Deer, 24th; Calgary, 29th; Stouffville, 31st.

*Kingfisher.*—Georgetown, 13th.

*Owl.*—Whiteside, 21st.

*Geese.*—Cutts, 9th; Muskowpetung, 11th; Calgary, 12th; Tobacco Plains, 15th; Kneehill, 17th; Chaplin, 20th; Calgary, 20th; Red Deer, 21st; Cunnington Manor, 22nd; Point Escuminac, 22nd; Gatesgarth, 23rd; Hillview, 23rd; Pipestone, 23rd; Pembina Crossing, 23rd; Barnardo, 29th; Norquay, 20th.

*Hawks.*—Gatesgarth, 24th; Georgetown, 25th.

*Plover.*—Georgetown, 28th; Birnam, 31st.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY, DURING WHICH THE SUN  
WAS ABOVE THE HORIZON, IN THE MONTH OF MARCH, 1900.

	HOURS ENDING															
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria . . . . .			0.04	0.28	0.42	0.50	0.48	0.54	0.58	0.75	0.46	0.49	0.36	0.16		
Kuper Island . . . . .			0.00	0.13	0.37	0.44	0.49	0.45	0.47	0.47	0.45	0.41	0.40	0.20		
Agassiz . . . . .			0.00	0.08	0.35	0.36	0.41	0.46	0.43	0.44	0.55	0.75	0.12	0.00		
Battleford . . . . .			0.09	0.23	0.26	0.43	0.50	0.65	0.58	0.64	0.71	0.67	0.56	0.45	0.09	
Indian Head . . . . .			0.00	0.08	0.19	0.42	0.54	0.65	0.54	0.57	0.53	0.50	0.24	0.00		
Brandon . . . . .			0.08	0.27	0.37	0.39	0.57	0.54	0.58	0.55	0.48	0.46	0.31	0.21	0.06	
Winnipeg . . . . .			0.13	0.42	0.48	0.64	0.67	0.64	0.57	0.56	0.58	0.54	0.44	0.11		
Durham . . . . .			0.07	0.21	0.34	0.37	0.41	0.39	0.36	0.39	0.44	0.37	0.26	0.12		
Woodstock . . . . .			T	0.10	0.35	0.50	0.54	0.51	0.46	0.41	0.49	0.48	0.34	0.15	T	
Toronto . . . . .			T	0.10	0.55	0.55	0.59	0.58	0.59	0.54	0.56	0.58	0.49	0.32	0.08	
Lindsay . . . . .			0.09	0.36	0.52	0.55	0.54	0.52	0.54	0.54	0.55	0.48	0.42	0.37	0.09	
Barrie . . . . .			0.11	0.43	0.50	0.50	0.48	0.46	0.47	0.51	0.45	0.41	0.47	0.17		
Kingston . . . . .			0.08	0.44	0.57	0.62	0.60	0.62	0.60	0.53	0.49	0.46	0.36	0.09		
Ottawa . . . . .			0.10	0.41	0.47	0.66	0.72	0.66	0.67	0.60	0.53	0.46	0.36	0.10		
Montreal . . . . .			0.09	0.45	0.54	0.50	0.64	0.64	0.68	0.67	0.64	0.59	0.51	0.06		
Fredericton . . . . .			0.16	0.49	0.55	0.58	0.56	0.60	0.61	0.58	0.57	0.51	0.47	0.24		
	Victoria.	Kuper Island.	Agassiz.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Durham.	Woodstock.	Toronto.	Lindsay.	Barrie.	Kingston.	Ottawa.	Montreal.	Fredericton.
Mean proportion for month (Constant sunshine being 1.)	0.40	0.36	0.28	0.49	0.56	0.40	0.48	0.31	0.38	0.48	0.46	0.41	0.43	0.48	0.57	0.49
Difference from average . . . . .	+0.02	0.02	-0.04	0.02	0.02	0.04	0.03		-0.02	0.05	0.01	0.04	0.06		-0.10	-0.08
Maximum daily amount . . . . .	0.91	0.87	0.80	0.96	0.79	0.97	0.84	0.86	0.88	0.90	0.99	0.90	0.95	0.89	0.99	0.84
Date . . . . .	14	14	2	3	6	15	4	28	23	28	24	5	12	11	12	8
No. of days completely clouded . . . . .	6	10	13	4	5	10	4	8	6	4	5	10	5	5	4	7

## FORECASTS FOR MARCH, 1900.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 985. These were divided as follows:

District.	VERIFIED.				Percentage.
	No. Forecast.	No. Fully.	No. Partly.	No. Not.	
Manitoba	87	70	3	14	82.2
Lake Superior	88	68	10	10	83.0
Lower Lake Region	120	99	15	6	88.8
Georgian Bay	118	87	18	13	81.3
Ottawa Valley	117	94	13	10	85.9
Upper St. Lawrence	116	92	15	9	85.8
Lower St. Lawrence	112	94	11	7	88.8
Gulf	109	89	20	9	82.6
Maritime Provinces	118	99	10	9	88.4
Total	985	783	115	87	85.3

MONTHLY and Annual Summaries for the Year 1899, Fort Simpson, Mackenzie River—Latitude, N. 61° 42'  
Longitude, W. 121° 43'. Height above Sea, 1,000 feet.

MONTH.	TEMPERATURE.						RAIN.		SNOW.						Thunder Storms.
	Mean Max.	Mean Min.	Mean Daily Range	Max.	Min.	Mthly Range	Mthly Mean.	Amt.	Days.	Amt.	Days.	Gales.	Fog.	Auroras.	
								in.		in.					
January	7.3	-29.4	22.1	19.0	-54.0	64.0	-18.3	0.00	0	9.3	6	4	1	0	0
February	12.8	-37.2	24.4	7.0	-54.0	61.0	-25.0	0.00	0	3.5	3	13	0	0	0
March	3.4	-18.8	22.3	26.0	-37.5	63.5	-7.7	0.00	0	4.7	8	16	0	0	0
April	34.8	-11.4	23.4	56.0	-11.0	67.0	23.1	R		15.4	6	9	0	0	0
May.	46.0	-25.4	20.6	66.0	-9.0	75.0	35.7	1.40	8	5.3	2	2	2	0	0
June	65.6	-43.2	22.4	76.0	-36.5	85.9	54.4	3.84	20			3	1	0	0
July	70.5	-49.4	21.1	84.0	-35.0	49.0	60.0	1.99	8			0	0	0	0
August	65.6	-41.6	21.0	77.0	-24.0	53.0	53.6	0.82	4	0.5	1	0	0	0	0
September.	54.2	-32.8	21.4	64.0	-23.5	40.5	43.5	1.34	6			7	0	0	0
October	28.6	-42.6	16.0	58.0	-7.5	65.5	20.6	1.80	2	3.5	4	9	2	0	0
November	14.0	-44.4	-9.9	36.0	-22.0	58.0	-9.1	0.00	0	15.7	8	10	1	0	0
December	8.3	-23.1	14.8	7.0	-48.5	55.5	-15.7	0.00	0	10.5	7	9	0	0	0
Year			20.2	84.0	-54.0	138.0	19.4	11.19	48	68.4	45	82	7	0	0

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

Meteorological Office, Toronto,  
26th April, 1900.

Director.

SUMMARY OF OBSERVATIONS AT MARTIN'S FALLS, N. W. TERRITORIES, 1890.    LATITUDE 51° 30' N.  
LONGITUDE 86° 30' W.    HEIGHT,        FEET.

MONTHS.	PRESSURE AT 32°.			TEMPERATURE.							CLOUDS.					
	Monthly Mean.	Max.	Min.	—			—				—					
				9 a.m.	2 p.m.	7 p.m.	Mean Max.	Mean Min.	Mean Monthly Mean.	Extreme Max.	Extreme Min.	9 a.m.	2 p.m.	7 p.m.	Monthly Mean.	
	in.	in.	in.													
January . . . . .	29.215	30.047	28.768	15.6	3.4	9.5	2.2	22.3	12.2	32.0	40.0	47	49	35	44	
February . . . . .	29.206	29.729	28.541	17.3	0.9	8.4	4.5	25.6	12.0	26.0	52.0	44	47	39	40	
March . . . . .	29.314	29.877	28.676	14.9	11.6	5.9	12.4	18.2	2.9	28.0	43.0	49	54	49	50	
April . . . . .	29.258	29.714	28.743	31.5	40.3	36.9	42.7	20.4	31.1	60.0	15.0	67	62	55	61	
May . . . . .	29.317	29.753	28.721	43.6	50.3	45.8	53.4	31.0	42.2	74.0	20.0	51	57	47	52	
June . . . . .	29.218	29.594	28.748	53.3	61.3	57.1	61.0	41.7	52.9	83.0	28.0	58	57	54	57	
July . . . . .	29.177	29.484	28.683	62.7	69.2	63.6	71.9	45.5	58.7	82.0	30.0	59	67	48	58	
August . . . . .	29.128	29.700	28.698	56.9	65.7	61.4	68.4	46.5	55.5	81.0	32.0	61	66	57	61	
September . . . . .	29.260	29.711	28.703	43.8	52.4	47.0	53.8	34.5	44.2	77.0	19.0	70	64	61	65	
October . . . . .	29.300	29.832	28.571	36.5	44.9	40.4	46.0	28.8	37.4	65.0	15.0	68	68	60	66	
November . . . . .	29.267	29.845	28.704	27.5	32.2	28.8	32.9	22.4	27.5	48.0	8.0	85	85	82	84	
December . . . . .	29.214	29.880	28.659	3.4	1.4	0.8	5.9	10.2	2.4	37.0	35.0	60	66	53	60	

MONTHS.	NO. OF WINDS FROM										Average force of Wind.	No. of Gales.	Total Precipitation.	Days of or over.	Days of Snow.		Days.			Thunder Storms.	Auroras.
	N.	N.E.	E.	E.S.	S.	S.W.	W.	N.W.	Calm.	Fair Days.					Clear.	Partly Clear.	Cloudy.				
January .	5	2	3	3	0	7	20	8	45	1	1	0.63	1	7	24	15	6	10	0	4	
February	7	6	2	2	0	4	21	2	40	1	0	0.90	3	7	21	15	5	8	0	6	
March	14	11	3	5	0	3	6	13	38	1	0	0.96	7	8	23	10	11	10	0	4	
April	13	8	4	7	8	5	12	13	20	1	0	0.39	2	2	28	7	11	42	0	0	
May .	7	8	15	14	6	8	11	14	10	11	0	0.95	5	4	26	10	11	10	0	4	
June .	4	9	6	6	4	23	12	6	13	1	0	2.52	10	4	20	7	11	12	5	2	
July .	10	11	3	10	6	19	13	4	17	4	0	1.87	7		23	5	17	9	5	0	
August	10	14	3	13	4	12	10	3	24	4	0	1.44	10		11	9	7	15	5	2	
September	18	9	0	3	6	14	11	7	22	4	1	1.29	8	3	19	5	9	16	4	1	
October	4	4	0	4	13	10	20	3	38	4	0	1.02	6	4	20	5	11	15	3	2	
November	12	4	3	7	5	8	11	6	34	4	0	0.40	8	6	22	4	4	25	0	0	
December .	21	0	4	5	4	8	14	7	33	4	0	0.95	8	8	21	7	11	42	0	1	

[illegible]



SUMMARY OF OBSERVATIONS AT YORK FACTORY, HUDSON BAY, 1899.    LATITUDE 57° 0' N.  
LONGITUDE 92° 28' W.    HEIGHT, 55 FEET.

MONTH.	PRESSURE AT 32.			TEMPERATURE.								CLOUDNESS.			
	Monthly Mean.	Max.	Min.	7 a.m.	2 p.m.	9 a.m.	Mean Max.	Mean Min.	Monthly Mean.	Extreme Max.	Min.	4 a.m.	7 a.m.	9 p.m.	Mean.
	in.	in.	in.												
January	29.874	30.547	29.343	26.4	18.5	22.3		28.8	22.4	17.0	55.5				
February	29.841	30.384	29.150	25.9	11.4	20.4		28.2	19.5	15.0	52.0				
March	30.055	30.478	29.322	16.1	1.0	10.7		18.8	9.2	24.0	40.0				
April	29.854	30.416	29.101	16.7	30.4	19.8		12.0	21.7	50.0	12.0				
May	30.009	30.509	29.121	28.4	35.8	28.2	40.5	23.9	32.2	72.0	7.0				
June	29.851	30.218	29.457	42.9	49.8	43.2	53.1	37.0	45.0	78.0	23.0	67	60	55	61
July	29.796	30.164	29.400	51.5	59.2	51.7	63.9	44.7	54.3	84.0	34.0	70	64	64	61
August	29.735	30.175	29.132	49.7	55.2	47.7	60.4	43.1	51.7	71.0	33.5	66	61	54	60
September	29.847	30.270	29.356	38.4	46.0	39.1	51.1	34.8	42.9	70.0	22.0	74	67	63	68
October	29.848	30.532	28.514	29.0	33.2	29.9	36.9	26.9	31.9	56.0	1.0	86	89	85	84
November	29.878	33.373	29.276	14.9	17.6	16.0	21.8	12.0	16.9	35.0	10.0	78	80	84	81
December	29.890	30.527	29.206	10.4	6.2	9.1	0.1	15.4	7.7	31.5	35.0	52	50	48	50

MONTH.	NUMBER OF WINDS FROM									Average force of Wind.	No. of Gales.	Total Precipitation.	Days of snow or ice.	Days of Snow.	Fair Days.	DAYS.			Thunder Storms.	Auroras.
	N.	N.E.	E.	E.S.	S.	S.W.	W.	N.W.	Calm.							Clear.	Partly Clear.	Cloudy.		
	N.	N.E.	E.	E.S.	S.	S.W.	W.	N.W.	Calm.											
January	0	5	14	4	2	36	17	19	0	111	7	0.50	3	5	26				0	17
February	2	5	1	0	2	20	34	9	11	11	7	0.10	1	2	26				0	12
March	9	18	0	0	8	68	9	18	13	11	7	0.30	1	5	26				0	13
April	8	19	2	3	4	18	6	21	9	11	8	1.50	5	8	22				0	4
May	9	37	9	2	3	5	8	19	1	111	8	0.25	5	5	20				0	0
June	17	32	12	1	4	4	3	8	6	111	14	1.93	10	1	20	8	9	13	2	0
July	18	27	7	11	9	10	1	6	1	11	10	2.33	9	0	20	5	15	11	4	1
August	5	16	12	4	6	16	1	16	1	11	14	8.09	15	0	14	6	10	11	4	4
September	9	10	4	4	12	20	6	19	1	111	15	1.64	10	3	17	4	9	17	0	0
October	6	13	4	4	12	18	12	19	4	111	14	2.65	9	7	20	1	4	26	0	2
November	7	13	3	3	12	17	14	20	1	111	10	0.90	4	8	21	3	6	21	0	3
December	14	5	3	1	9	25	17	17	1	111	11		3	27	11	9	10		0	9

SUMMARY OF OBSERVATIONS AT FORT CHURCHILL, HUDSON BAY, 1899.    LATITUDE, 58° 31' N.  
LONGITUDE, 90° 11' W.    HEIGHT, 38 FEET.

MONTH.	PRESSURE AT 52°			TEMPERATURE								CLOUDINESS			
	Mthly Mean.	Max.	Min.	6 a.m.	7 p.m.	10 p.m.	Mean Max.	Mean Min.	Mthly Mean.	Extreme Max.	Extreme Min.	6 a.m.	7 p.m.	10 p.m.	Mean
	in.	in.	in.												
January	29.968	30.664	29.412	24.0	19.5	21.9	14.6	34.3	21.5	43.0	37.0	48	46	37	44
February	29.919	30.452	29.234	22.2	15.9	19.3	12.7	31.2	22.0	40.0	10.0	53	45	35	41
March	30.118	30.528	29.288	16.0	7.0	12.9	0.8	25.3	13.0	23.0	45.0	44	32	26	34
April	29.924	30.556	29.106	13.4	20.9	15.3	30.0	4.2	47.4	48.0	18.0	57	53	56	55
May	30.107	30.610	29.281	22.6	27.7	24.2	34.6	12.6	23.6	52.0	10.0	70	64	65	66
June	29.930	30.287	29.446	12.8	45.4	40.0	52.4	28.8	40.4	75.0	13.0	57	54	53	54
July	29.836	30.165	29.526	53.8	56.4	49.4	68.2	37.4	52.8	83.0	22.0	54	56	41	48
August	29.786	30.185	29.105	48.1	50.3	46.4	58.2	33.0	45.6	74.0	25.0	60	62	54	59
September	29.916	30.308	29.416	40.4	44.5	38.3	50.4	25.8	38.4	65.0	16.0	62	60	61	61
October	29.868	30.545	28.769	28.9	30.0	26.9	35.6	16.2	25.9	53.4	4.0	82	75	75	77
November	29.919	30.410	29.353	11.1	13.6	12.1	20.7	4.6	11.1	42.0	23.0	70	68	68	69
December	29.955	30.674	29.232	8.6	6.4	6.5	0.3	20.9	10.6	17.4	35.0	52	47	43	47

MONTH.	NUMBER OF WINDS FROM										Average force of Wind.	No. of Gales.	Total Precipita- tion.	Days of or over.	Days of Snow.			Fog Days.			Days.			Thunder Storms.	Auroras.
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.	Clear.					Partly Cloudy.	Cloudy.	Thunder Storms.	Auroras.							
January.	6	5	2	3	2	2	50	6	17	11	3	0.12	4	4	27	13	13	5	0	4					
February.	3	2	0	1	1	4	34	2	7	11	5	0.06	2	2	26	13	9	6	0	9					
March.	11	9	2	4	1	4	22	6	37	4	1	0.41	6	7	24	17	7	7	0	12					
April.	7	9	3	4	2	1	17	7	40	11	2	0.80	5	9	21	7	12	11	2						
May.	7	23	6	8	2	2	6	10	29	14	4	0.37	2	8	23	3	12	16	0	1					
June.	5	16	4	13	1	3	5	7	36	1	1	2.40	4	4	23	6	13	11	0	0					
July.	7	11	0	13	4	4	5	12	36	1	0	0.25	2	0	29	7	20	4	1	2					
August.	6	16	2	11	1	3	5	4	36	1	1	3.06	12	0	19	5	14	9	0	0					
September.	9	8	3	9	2	11	9	9	18	1	0	1.25	8	0	23	2	20	4	0	0					
October.	5	8	4	4	2	6	14	7	16	11	0	1.45	6	4	0	1	8	13	0	0					
November.	1	13	4	0	7	7	13	12	36	1	0	1.40	3	3	0	2	14	14	0	0					
December.	11	3	0	5	0	17	20	5	26	11	3	0.00	0	0	0	10	12	9	0	0					

SUMMARY OF OBSERVATIONS AT FORT CHIPEWYAN, NORTH WEST TERRITORIES, 1899  
LATITUDE, 58° 43' N. LONGITUDE, 116° 10' W. HEIGHT, —

MONTH.	PRESSURE AT 32.						TEMPERATURE.					CLOUDINESS.			
	Mthly Mean.	Max.	Min.	8 a.m.	4 p.m.	8 p.m.	Mean Max.	Mean Min.	Mthly Mean.	Extreme Max.	Extreme Min.	% a.m.	1 p.m.	3 p.m.	Mean.
	in.	in.	in.												
January.....	29.188	29.704	28.570	14.8	16.3	12.9	5.5	-21.1	13.3	21.6	-38.4	65	61	30	52
February.....	29.316	30.125	28.282	21.7	15.5	19.1	11.9	-25.6	18.7	21.2	-46.4	48	44	27	40
March.....	29.414	29.860	28.805	9.4	5.4	7.4	2.8	-15.5	6.4	21.4	-35.1	58	56	27	45
April.....	29.130	29.606	28.332	19.7	28.4	21.1	31.3	12.8	21.8	52.6	12.0	53	56	43	51
May.....															
June.....															
July.....															
August.....															
September.....															
October.....															
November.....	28.997	29.410	28.472	22.1	21.3	22.4	27.9	16.5	21.2	42.1	-6.2	88	83	76	82
December.....	29.164	29.841	28.326	1.5	1.3	1.3	8.2	9.0	0.4	42.5	-28.5	62	58	43	54

MONTH.	NUMBER OF WINDS FROM									Average force of Wind.	No. of Gales.	Total precipitation.	Days 40 or over.	Days of Snow.	Fair Days.	DAYS.			Thunder Storms.	Auroras.
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.							Clear.	Partly Cloudy.	Cloudy.		
January. . . . .	2	33	2	9	0	2	7	27	6	11	0	0.63	5	5	26	10	11	8	0	0
February. . . . .	2	25	0	2	0	0	10	22	23	11	0	0.55	6	6	22	15	10	3	0	0
March . . . . .	1	26	1	3	0	7	16	18	21	11	3	1.11	6	6	25	14	10	7	0	0
April . . . . .	2	38	0	8	2	8	2	16	14	1	1	3.80	3	3	27	13	7	10	0	0
May . . . . .																				
June.....																				
July.....																				
August . . . . .																				
September.....																				
October.....																				
November.....	3	41	25	6	0	3	7	15	11	11	5	0.22	5	9	20	1	4	25	0	0
December . . . . .	7	43	15	7	3	7	14	14	9	111	13	0.12	2	6	25	7	13	9	0	0



# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

APRIL, 1900.

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observation received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of April was chiefly remarkable for the high mean temperatures which prevailed, more especially in the western half of the country, where in some places it was between 11 and 13 above average. Added to this was an unusually large amount of bright sunshine in nearly all districts and much dry weather west of New Brunswick, but not including the North-west Territories. Frosts occurred in a few portions of the Dominion; those recorded, however, after the 17th, when vegetation might have been affected, were generally unimportant, and the condition of plant life on the 31st west of New Brunswick was most promising.

In British Columbia the weather was exceedingly fine and mild and in most districts it was unusually dry. Several gales occurred on the Coast, but no damage appears to have been caused thereby, and the only adverse reports were those of frost, which in some districts cut down delicate plants and damaged fruit trees. Nevertheless, on the 31st reports regarding the condition of vegetation were generally favourable.

In the North West Territories the weather was unusually fine and mild, the temperature at some stations being as much as 8 and 10 above average, and although the precipitation, which included some snow, was generally somewhat above average, the showers that fell were quickly followed by bright sunshine. These conditions were most favourable to vegetation, which was generally more forward than usual, the frosts that occurred apparently doing little damage.

In the Province of Manitoba the weather was even milder than in the Territories, the temperature being considerably above average, but it was much dryer, and in some places there was a complete absence or only a trace of rain. Hard frosts occurred throughout the Province, but after the 16th they were only light, and vegetation, though exceptionally forward, thus escaped injury. Old inhabitants state that they have never before experienced such fine April weather in this province.

In Ontario the weather conditions, though not quite so favourable as to the westward, were quite exceptional, the temperature and amount of sunshine being generally above average. The frosts of any importance occurred generally before the 11th, and did little damage; but the exceedingly light rainfall, though beneficial for farming operations early in the month, was of little assistance in the germination of grain, and on the 31st the condition of plant life was normal. Although high winds were rather frequent during the month few storms of any importance were reported.

The weather in the Province of Quebec was equally mild with that in Ontario, the temperature being above average in most districts. The precipitation was also unusually light at most stations, but at a few places on the contrary it was above average, and included at eastern stations quite a large proportion of snow. Hard frosts occurred at all stations, but the condition of vegetation on the 21st was about average, no damage apparently having been caused thereby.

In New Brunswick, although the temperature was somewhat above the average, there was a great absence of bright sunshine, and a rather excessive amount of precipitation. Altogether the weather was exceedingly gloomy, and during the latter part of the month most unpleasantly cool. Frosts were general, ice was laid on the lakes on the 31st, and there was plenty of snow in the woods at the same date. Vegetation, as might be expected, was rather backward on the 31st.

The weather in Nova Scotia was very similar to that in New Brunswick, the temperature and precipitation being above average; the latter condition, however, was much more excessive, it being more than twice the

average amount in some places. At many places a considerable portion of the precipitation was snow, there being a heavy snow storm on Cape Breton on the 24th, 25th and 26th, and at Pictou the hills were covered with snow on the 31st. Frosts occurred rather frequently and vegetation was very backward on the 31st.

In Prince Edward Island the weather was much the same as in New Brunswick, it being unpleasantly cool and gloomy, with much precipitation, and on the 31st vegetation was exceedingly backward. F. F. PAYNE.

### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was below average in British Columbia, Quebec and the Maritime Provinces, and generally above average elsewhere. The greatest amount above average amounting to .060 of an inch occurred in the northern parts of Ontario and the greatest amount below average ranging from .060 to .110 of an inch was recorded in the Maritime Provinces.

### LOW AREAS.

With the exception of No. 2 the depressions were not particularly energetic. Low pressure movements were decidedly erratic and only seven depressions could be accurately charted.

No. 1 formed over the south part of Lake Michigan on the 1st in an existing low pressure trough. It developed considerably as it passed into and over the Maritime Provinces. It caused showers in the Lake Region, the Ottawa Valley, the Upper St. Lawrence district and in the Maritime Provinces and a fall of snow in the Lower St. Lawrence Valley and Gulf, the winds at the same time increasing to moderate gales in many portions of Eastern Canada. No. 2 was situated to the eastward of Bermuda on the 5th. It proved to be a very important depression and when off the Cape Breton Coast on the 7th the barometer at Sydney was 28.90 inches. It caused between the 7th and 8th a northerly gale and snowstorm throughout the Maritime Provinces and the Gulf of St. Lawrence and for several days afterwards a continuance of unsettled weather. Between the 1st and 10th several moderate depressions moved from the North Pacific States and British Columbia into the North-west Territories and States and then broke up. Local rains or scattered showers usually occurred in the path of these depressions. No. 3 was a shallow depression which was situated in the Lower Mississippi Valley on the 11th. It showed throughout its course two foci. The first of these travelled from Tennessee quickly into the Lake Region and afterwards down the St. Lawrence Valley. The second one passed up the United States Atlantic Seaboard into the Maritime Provinces and on the 15th a well defined storm was centred over the Island of Anticosti. During the presence of this system the weather was very unsettled from Ontario to the Maritime Provinces and rain, sleet, and snow were of frequent occurrence; the heaviest precipitation occurring in the Maritime Provinces. No. 4 moved into the Lake Region on the 17th from the vicinity of Kansas and the neighbouring States. On the 18th it reached the St. Lawrence and on the 19th passed over the Maritime Provinces. It was attended by a general and copious rainfall throughout its course, and there were local thunderstorms in Southern Ontario. No. 5 moved into Alberta on the 17th and after passing over Manitoba on the 18th, dispersed. No. 6 was a moderate depression which between the 18th and 21st moved from the Gulf of Mexico to the Lower Missouri Valley. No. 7 appeared over Lake Superior on the 29th and reached the Lower St. Lawrence Valley by the night of the 30th. It caused some light scattered showers in Ontario and Quebec. In the Maritime Provinces from the 23rd the end of the month the pressure was persistently low and on the 25th, 26th and 27th decidedly low, especially in the eastern portion. The weather during the period was continually unsettled; there were frequent falls of rain, sleet and snow, and on the 25th and 26th the winds locally increased to the force of a moderate gale.

### HIGH AREAS.

Seven areas of high pressure have been traced; the majority of which were not very energetic, but they were remarkable for the persistency with which they hovered. The course of No. 2 was particularly remarkable.

No. 1 was situated over Manitoba on the morning of the 8th; the same night it was centred near Lake Superior whence it moved directly southward and on the 7th broke up over Alabama. At first it was a pronounced area and sharp freezing weather attended its progress over the Lake Region. No. 2 was situated to the northward of Lake Superior on the 8th and 9th. It was an area of great energy and it spread rapidly at first over the greater portion of Canada accompanied by decidedly cool weather. The main area, however, ultimately retrograded into Manitoba and the Territories where it hovered from the 10th until the 13th, gradually breaking up. No. 3 was apparently an offshoot of No. 2, and on the 3rd covered the South-west States with no well marked centre; by the morning of the 14th, however, the area had been transferred north-eastward and was centred in Tennessee; it subsequently passed off the New England Coast. Ontario, Quebec and the Maritime Pro-

vinces meanwhile coming under its influence. No. 4 was moderate area which between the 14th and 17th travelled from the British Columbia Coast line to Manitoba and then dispersed; when passing over the Territories and Manitoba, it was accompanied by low night temperatures. No. 5 was a feeble area which appears to have formed over Colorado during the night of the 17th; on the 19th it moved into the Lower Lake Region where it lost its identity on the 20th. No. 6 appeared to the northward of Lake Superior on the 23rd; it afterwards persistently hovered over the Lake Region until the 28th accompanied by fine weather. After the 28th it dispersed. No. 7 moved between the 27th and 28th into British Columbia from the Pacific Ocean, and then travelled south-eastward to Kansas and broke up. It was of moderate energy only.

#### WINDS.

In British Columbia the winds were for the most part variable in direction, the westerly being perhaps the most frequent. On fourteen days fresh or strong breezes were generally recorded, and on the 17th the force of a gale was reached. In the North-west Territories the direction was fairly evenly divided between the easterly and the westerly; the wind mileage was considerable, fresh to strong breezes being recorded on twenty-six days. In Manitoba the easterly direction was more general than any other; there was a small wind mileage compared to that which occurred in the Territories, fresh to strong breezes being experienced on only fourteen days. In the Lake Region there were seventeen days when the wind was westerly and six days when it was easterly. Fresh or strong breezes prevailed on seventeen days and one moderate gale was recorded. In the Ottawa Valley and the Upper St. Lawrence Valley the westerly direction predominated and on twenty days fresh to strong breezes were recorded. In the Gulf of St. Lawrence and in the Maritime Provinces the westerly direction was also much in evidence; fresh to strong breezes prevailed frequently, and on four occasions the force of a gale was reached in the Maritime Provinces and on five occasions in the Gulf of St. Lawrence.

#### BRIGHT SUNSHINE.

Bright sunshine was above average in all portions of Canada where sunshine observations are taken, except in parts of Quebec and throughout the Maritime Provinces, where it was below. Winnipeg registered the largest amount, 71 per cent of the possible, Battleford 61 per cent, Toronto 55 per cent, Victoria 51 per cent. On the other hand Fredericton registered only 37 per cent. of the possible amount, being 10 per cent below average.

#### TEMPERATURE.

The temperature was above average in all portions of Canada. It was as much as 12° above in Manitoba, and from 4° to 11° in the North-west Territories. In British Columbia it was in excess of the average from 3° to 6°, in Ontario from 2° to 6°, and in Quebec from 1° to 4°, whilst in the Maritime Provinces it was from average to 3° above.

*The following are the Highest and Lowest Temperatures recorded in each Province during March, 1900.*

British Columbia,	95° 0 on 30th at Griffin Lake.	10° 0 on 9th at Barkerville.
North-west Territories,	89° 0 on 23rd at Regina.	1° 0 on 17th at Moose Jaw.
Manitoba,	86° 0 on 22nd at Portage la Prairie.	12° 0 on 16th at Barnardo.
Ontario,	87° 0 on 29th at Biscotasing.	2° 0 on 4th at White River.
Quebec,	75° 0 on 22nd at Richmond.	10° 8 on 1st at Father Point.
New Brunswick,	76° 4 on 21st at Fredericton.	9° 0 on 3rd at Bathurst.
Nova Scotia,	72° 0 on 21st at Halifax.	17° 8 on 2nd at Truro.
Prince Edward Island.	70° 0 on 28th at Murray River.	20° 0 on 4th at Murray River.

#### PRECIPITATION.

The precipitation in the Maritime Provinces was generally above the average, this was especially the case in the eastern part, where at Sydney the excess amounted to 3·8 inches. In all other portions of the Dominion except in a few isolated localities, the precipitation was below the average. In British Columbia the deficiency at many places was from an inch and a quarter to an inch and a half. At both Winnipeg and Quebec it was an inch and a quarter below the average amount, and in Ontario it varied from a tenth of an inch to a little over an inch. Snow fell heavily in many portions of the Maritime Provinces on several occasions, especially during the last week of the month, but elsewhere in Canada very little snow was recorded and all the snow had disappeared from the ground by the end of the month except in parts of Eastern Quebec and the Maritime Provinces.





N. W. TERRITORIES:—*Con.*

[illegible]

### INTRODUCTION :

[illegible]



[illegible]

OBSERVATION AT STATIONS REPORTING RAIN, SNOW AND WEATHER, DURING  
APRIL, 1900.

STATIONS.	RAINAGE.					SNOW-FALL.				REMARKS.
	Amount in inches.	Days- of Occ.	No. of Fm. Day	Heaviest Fall in Month.	Date.	Amount in inches.	No. of Days.	Heaviest Fall in Month.	Date.	
BRITISH COLUMBIA.										
Naselle Harbor	6.89	18	12	1.24	21	3.5	1	3.5	7	
Nanaimo	1.66	6	24	1.15	5					
Nanclay	1.08	10	20	1.15	5					Thunder-storm, 1st.
Vancouver	1.37	10	19	1.51	6					Thunder-storm, 1st.
Goldstream Lake	3.05	11	19	0.91	5					
Royal Oak	1.40	8	22	0.50	4					
Vancouver (2)	1.19	9	21	1.15	6					Lightning, 2nd.
N. W. TERRITORIES.										
Salteoats	0.15	1	27	0.15	1					
Conits	1.72	5	26	0.81	25	1.0	2	1.0	9-10	
Imperial	2.05	4	23	1.50	25	1.0	2	1.0	17-18	Heaviest snow-storm of winter.
Roubaix	0.20	2	27	0.10	25	6.0	1	6.0	16	
Crescent Lake	0.01	1	29	0.01	25					
W. Beaver Hills	2.17	8	21	0.27	22	1.5	3	1.5	15	
N. E. Beaver Hills	3.03	7	20	2.19	26					
MANITOBA.										
Norquay	0.70	4	26	0.30	9					Thunder-storm, 27th.
Hartney	0.10	1	29	0.10	27					
Selkirk	0.50	1	28	0.50	9					
Belmont	0.24	1	26	0.14	26					Thunder-storm, 26th.
Oakbank	0.24	3	26	0.19	9					
Morden	0	0	27							
Rapid City	0.41	1	27	0.41	26					Thunder-storm, 26th.
Cartwright	0.39	1	26	0.23	27					Thunder-storm, 26-27th.
Pembina Crossing	0.25	1	26	0.25	26					Thunder-storm, 8-26th.
Cartwright (2)	0.28	2	26	0.20	27					
Deloraine	0.10	3	27	0.05	24					
Turtle Mountain	0.60	2	28	0.40	25					Thunder-storm, 26th.
ONTARIO.										
Deer Park	1.96	7	22	0.57	18					
Parma	2.66	6	23	0.80	24	4.0	1	4.0	11	
Valdage	1.04	1	23	0.37	17		3			
Montague	0.67	2	28	0.40	17					
Wooler	2.26	6	23	0.81	22	2.0	1	2.0	13	
Midland	0.84	5	25	0.25	21					
Penetanguishene	1.28	10	19	0.36	17	0.5	1	0.5	14	
Kirby	0.85	2	27	0.46	19	0.3	1	0.3	15	
Ursa	1.87	6	24	0.77	17	2.0	1	2.0	14	
Lion's Head	0.88	3	27	0.57	17					
Princeton	0.88	5	24	0.30	9	0.5	1	0.5	13	
Robbins Mills	0.80	3	26	0.45	22	2.0	1	2.0	13	
Dealtown	2.04	7	23	0.95	17		2			
Scarboro'	1.46	8	26	0.75	18		1			
Georgetown	1.58	10	17	0.50	17	0.8	3	0.5	3	
Orangeville	2.40	7	22	0.76	22	3.5	1	3.5	12	
Providence Bay	1.15	7	22	0.54	18	1.0	1	1.0	13	
Huntsville	1.01	3	27	0.71	18					
Wyoming	1.50	6	21	0.55	17		3			
Oliver's Ferry	0.30	3	27	0.15	22					
Wilton Grove	1.67	7	21	0.76	17		2			
Dutton	1.55	5	25	0.90	17					
Arden	1.31	8	22	0.47	18					
Watford	1.55	7	23	0.50	17					
N. Williamsburg	0.80	5	25	0.41	17					
Jermyn	1.75	3	27	0.80	22					
Aurora	2.28	7	23	1.27	22					
Goderich	1.20	3	25	0.50	17	1.0	2	0.5	13-14	
Cherry Valley	1.88	5	25	0.76	18	2.0	1	2.0	13	
Elgin	0.88	5	25	0.31	13					
Elmsdale	1.25	11	18	0.47	18		2			
Wharton	0.83	4	26	0.69	18	1.0	1	1.0	14	
Lansdowne	1.07	3	27	0.54	17					
Port Burwell	1.53	5	22	0.32	11	1.8	3	1.0	12	
Sunshine	1.76	7	22	0.65	18	1.0	1	1.0	14	
NEW BRUNSWICK.										
Poinc Esplanade	0.55	4	24	0.41	19	0.9	2	0.6	7	
NOVA SCOTIA.										
Fort Morden	3.02	9	19	1.42	6	11.0	2	11.0	24-5	
P. E. ISLAND.										
Mount Stewart	0.74	1	26	0.74	2	10.5	3	5.0	1	

*Aurora recorded:—*

Where the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the poorest in brilliancy.

1. Pembina Crossing, IV : Athabasca Landing, Minnedosa, IV : Channel Island, IV.
4. Cockburn Island, Meaford, IV : Lucknow, III : Quebec, IV : Medicine Hat, IV : Minnedosa, IV : Oonikap.
8. Pembina Crossing, II.
9. Rat Portage, Cannington, Manor, Muskowpetung, IV : Minnedosa, IV : Channel Island, IV : Tagish, II.
10. Chicoutimi, Aweme, III : Minnedosa, II.
11. Pembina Crossing, III : St. Agath des Mont, Naas Harbour, B.C.
15. Chicoutimi.
20. St. Agathe des Mont, Truro, IV : W. Beaver Hills, IV.
22. Prince Albert, I.
23. W. Beaver Hills, IV.
25. Pembina Crossing, IV : Chicoutimi.
27. Prince Albert, II : Channel Island, IV : Red Deer, IV.
28. Minnedosa, IV.
30. Cartwright, Pembina Crossing, I : Chicoutimi, Belmont, Midland, II : Huntsville, III : Cannington, Manor, Muskowpetung, Gravenhurst, III : Durham, III : St. Agathe des Monts, Rat Portage, Calvin, Regina, Aweme, I : Portage la Prairie, Brantford, Treherne, II : Medicine Hat, II : Minnedosa, IV : Stoney Mountain, II : Coldwater, I : Truro, IV : Point Escuminac, III : Prince Albert, I : Red Deer, III.

*Thunder recorded on—*

1. Langley, Vancouver, Rivers Inlet.
3. Banff.
5. Bermuda.
6. Chaplin.
8. Pembina Crossing.
17. Beatrice Dutton.
18. Bancroft, Hamilton, Kinmount, Agincourt, Stony Creek, Whiteside, Collingwood, Haliburton, Birmam, Port Dover, Brantford, Otonabee, Uplands, Peterboro' Erasmus, Stouffville, St. Ann's, Clontarf, Calvin, Chicoutimi, Midland, Kitley, Ursa, Scarboro, Georgetown, Aurora, Cherry Valley, Elgin, Emsdale, Wiarton, Port Burwell, Sunshine, Gravenhurst, Lindsay, Stratford, Coldwater, Toronto, Renfrew, Deseronto.
19. Sussex, Moncton, Hamilton, P.E.I., Summerside, Arden, Fredericton, Grand Manan.
20. Kneehill, Moosomin, Cannington, Manor.
21. Calgary.
23. Bancroft, Roblins Mills, Point Escuminac, Muskowpetung, Wooler, Battleford.
25. Barnardo, Battleford, Qu'Appelle.
26. Belmont, Rapid City, Cartwright, Pembina Crossing.
27. Norquay, Cartwright.
29. Meaford, Barnardo.
30. Brome.

*Appearance of Spring Birds, &c. :*

*Swallows.*—Peterborough, 17th : Brome, 18th : Lakefield, 19th : Pembina Crossing, 21st : Georgetown, 22nd : Rivers Inlet, 22nd : Agincourt, 23rd : Calvin, 25th : Stouffville, 25th : Ridgetown, 25th : Emsdale, 26th : Ursa, 27th : Muskowpetung, 28th.

*Bobolink.*—Georgetown, 22nd.

*Robins.*—Midland, 1st : Penetanguishene, 1st : Bancroft, 1st : Erasmus, 1st : Lakefield, 1st : Beatrice, 1st : Owen Sound, 2nd : Fredericton, 3rd : Norquay, 3rd : Crescent Lake, 4th : Brome, 4th : Peterborough, 4th : Agincourt, 5th : Pembina Crossing, 5th : Lansdowne, 5th : Gatesgarth, 6th : Huntsville, 9th : Haliburton, 9th : Qu'Appelle, 9th : Portage la Prairie, 10th : Muskowpetung, 10th : Emsdale, 11th : Athabasca Landing, 12th : Providence Bay, 15th : Calvin, 15th : Hillview, 17th : Clontarf, 20th : Red Deer, 7th : Channel Island, 18th : W. Beaver Hills, 12th.

*Blackbirds.*—Norquay, 1st : Owen Sound, 1st : Bognor, 1st : Lucknow, 1st : Scarboro' 2nd : Georgetown, 2nd : Fredericton, 3rd : Arden, 4th : Stouffville, 5th : Lakefield, 5th : Pembina Crossing, 6th : Midland, 6th : Erasmus, 8th : Elkhorn, 11th : Peterborough, 21st.

*Blue Birds.*—Georgetown, 2nd : Scarboro, 5th : Erasmus, 6th : Owen Sound, 15th.

*Ducks.* — Gatesgarth, 1st; Minnedosa, 2nd; Aweme, 4th; Norquay, 4th; Crescent Lake, 4th; Athabasca Landing, 5th; Bognor, 5th; Dutton, 13th; Haliburton, 15th; Tagish, 14th; Channel Island, 18th; W. Beaver Hills, 5th; Deloraine, 1st; Oonikup, 9th.

*Geese.* — Athabasca Landing, 5th; Montague, 6th; Abitibi, 14th; Calvin, 19th; Beatrice, 20th; Tagish, 12th; Channel Island, 2nd; W. Beaver Hill, 6th; Deloraine, 1st; Oonikup, 3rd.

*Phoebes.* — Lakeland, 5th; Arden, 7th.

*Crows.* — Crescent Lake, 2nd; Portage la Prairie, 4th; Hillview, 6th; Gatesgarth, 6th.

*Black Martin.* — Georgetown, 16th.

*Gull.* — Pembina Crossing, 12th; Channel Island, 8th; Oonikup, 17th.

*Whippoorwill.* — Scarboro', 29th (have not heard one for some years.)

*Plover.* — Norquay, 3rd; Pembina Crossing, 4th; Hillview, 8th; Qu'Appelle, 8th; Muskowpetung, 14th; Owen Sound, 18th; Oonikup, 19th.

*Meadow Lark.* — Lucknow, 2nd; Agincourt, 3rd; Aweme, 4th; Morden, 4th; Portage la Prairie, 4th; Muskowpetung, 4th; Cartwright, 4th; Crescent Lake, 4th; Winnipeg, 5th; Minnedosa, 5th; Qu'Appelle, 5th; Owen Sound, 14th; Lakeland, 20th.

*Crane.* — Aweme, 6th; Pembina Crossing, 15th; Muskowpetung, 19th; Channel Island, 26th.

*Humming Bird.* — Rivers Inlet, 3rd; Alberni, 16th.

*Cow Bird.* — Owen Sound, 23rd.

*Frogs.* — Ridgetown, 1st; Chaplin, 3rd; Red Deer, 3rd; Qu'Appelle, 4th; Muskowpetung, 5th; Norquay, 5th; Rapid City, 5th; Pembina Crossing, 5th; Crescent Lake, 6th; Georgetown, 7th; Welland, 7th; Lucknow, 7th; Birnam, 7th; St. George, 9th; Kingston, 11th; Hillview, 11th; Athabasca Landing, 12th; Banff, 12th; Lansdowne, 14th; Stratford, 15; Midland, 16th; Clontarf, 16th; Stouffville, 16th; Bancroft, 17th; Coldwater, 17th; Gravenhurst, 17th; Emsdale, 18th; Erasmus, 18th; Beatrice, 18th; Brome, 19th; Moose Jaw, 20th; Calvin, 20th; Agincourt, 20th; Scarboro', 21st; Deloraine, 5th.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN  
WAS ABOVE THE HORIZON IN THE MONTH OF APRIL, 1900.

	HOURS ENDING—															
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria.....		0.07	0.29	0.48	0.53	0.58	0.61	0.61	0.68	0.70	0.66	0.65	0.61	0.45	0.19	
Kuper Island.....		0.18	0.39	0.47	0.58	0.59	0.57	0.61	0.66	0.65	0.60	0.55	0.44	0.23		
Agassiz.....		0.01	0.14	0.25	0.32	0.46	0.53	0.52	0.52	0.58	0.50	0.38	0.29	0.17	0.04	
Battleford.....		0.09	0.36	0.41	0.46	0.57	0.65	0.65	0.70	0.69	0.62	0.65	0.42	0.34	0.08	
Indian Head.....			0.09	0.46	0.61	0.61	0.64	0.64	0.68	0.67	0.63	0.63	0.59	0.39	0.05	
Brandon.....		0.08	0.47	0.72	0.74	0.78	0.89	0.84	0.85	0.86	0.81	0.78	0.65	0.40	0.09	
Winnipeg.....		0.29	0.67	0.77	0.81	0.83	0.92	0.94	0.84	0.83	0.84	0.87	0.84	0.68	0.10	
Durham.....		0.20	0.34	0.42	0.44	0.45	0.48	0.52	0.57	0.54	0.56	0.54	0.47	0.29	0.03	
Woodstock.....		0.07	0.32	0.50	0.61	0.63	0.67	0.70	0.67	0.65	0.61	0.60	0.52	0.32	0.07	
Toronto.....			0.18	0.53	0.66	0.63	0.73	0.68	0.69	0.73	0.70	0.65	0.58	0.49	0.18	
Lindsay.....		0.15	0.36	0.53	0.59	0.62	0.63	0.67	0.64	0.67	0.69	0.67	0.62	0.57	0.41	0.04
Barrie.....		0.04	0.33	0.41	0.52	0.59	0.61	0.62	0.67	0.65	0.61	0.61	0.55	0.39		
Kingston.....		0.09	0.43	0.58	0.57	0.70	0.72	0.65	0.56	0.60	0.57	0.58	0.51	0.37	0.07	
Ottawa.....		0.07	0.42	0.55	0.59	0.60	0.60	0.64	0.65	0.66	0.64	0.63	0.54	0.43	0.09	
Montreal.....		0.03	0.35	0.49	0.52	0.57	0.58	0.58	0.60	0.56	0.56	0.63	0.48	0.22		
Fredericton.....		0.02	0.27	0.35	0.41	0.42	0.44	0.49	0.49	0.47	0.48	0.47	0.35	0.31	0.09	
Mean proportion for month (Constant sunshine being 1.)		0.51	0.47	0.54	0.52	0.49	0.64	0.74	0.43	0.51	0.55	0.58	0.49	0.51	0.52	0.37
Difference from average.....		0.19	0.08	0.13	0.03	0.14	0.24	0.26		0.09	0.06	0.08	0.06	0.03		0.10
Maximum daily amount.....		0.91	0.89	0.86	1.00	0.85	0.90	0.91	0.91	0.90	0.89	0.98	0.90	0.91	0.99	0.94
Date.....		29	20	29	3.4	29	10	29	8	27	26	25	8	26	26	16
No. of days completely clouded.....		2	3	8	4	2	1	0	10	7	3	3	6	3	4	7

## FORECASTS FOR APRIL, 1900.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 810. These were divided as follows:—

DISTRICT.	No. Issued.	VERIFIED.			Percentage.
		No. Fully.	No. Partly.	No. Not.	
Manitoba	79	74	2	6	91.1
Lake Superior	88	75	2	11	86.4
Lower Lake Region	92	72	13	7	81.3
Georgian Bay	87	76	4	7	89.7
Ottawa Valley	80	69	2	9	87.5
Upper St. Lawrence	80	69	4	7	88.7
Lower St. Lawrence	86	71	6	9	86.0
Gulf	105	72	15	18	75.7
Maritime Provinces	113	73	16	24	71.7
Total	810	648	64	98	81.0

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

Meteorological Office, Toronto,

26th May, 1900.

R. F. STUPART,

*Director.*



# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

MAY, 1900.

No. 5

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of May varied considerably throughout Canada, the meteorological quantities in many districts differing largely in contiguous districts; over large areas in the Central portion of the country, however, there was a distinct deficiency in the rainfall and everywhere east of Ontario the temperature was also deficient or only just average. In most districts there was much bright sunshine, but, owing doubtless to the lack of moisture and low temperatures, vegetation east of the Territories was somewhat backward on the 31st.

In British Columbia the weather conditions did not differ much from average, slightly excessive mean temperature and rainfall being reported from three or four stations only. Over the Coast and Islands there was a deficiency in bright sunshine, nevertheless the condition of vegetation throughout the Province was about average on the 31st. Frosts occurred at some places after the 20th and at Stuart's Lake they were recorded frequently throughout the month, though little damage appears to have been caused thereby.

The weather in the North-west Territories was unusually fine and warm and in most districts there was a plentiful supply of rain. At some stations the mean temperature exceeded the average by five or six degrees, but like the rainfall, which at a few places was below average, the temperature in many contiguous districts was only just average. The warmest period was from the 9th to 14th and on or about the 26th when temperatures exceeding 90° were recorded at many places, and at Regina 99° was recorded on the 28th. Frosts occurred at most stations but did little damage, and on the 31st vegetation was exceedingly forward and in excellent condition.

The weather in Manitoba was unusually fine, warm and dry, the temperature being considerably above average and the rainfall below. From the 1st to 8th and 14th to 19th it was comparatively cool, but between these periods the maximum temperatures, which in many places exceeded 90°, occurred; and after the 19th there was much warm weather. Frequent high winds helped much to dry the land and vegetation which was unusually forward on the 1st was quite backward on the 31st owing to lack of moisture. Heavy dews occurred during the month which were of some benefit, and the frosts that occurred during the first week did little damage.

In Ontario the weather was for the most part fine, warm and dry in western and north western districts, and fine cool and dry in eastern counties, the temperature with a few exceptions exceeding the average in the former districts and being deficient in the latter portion, whilst the rainfall was generally below average everywhere. During the first week of the month it was exceptionally cool and frosts were general, ice forming in many places and snow flurries occurring in northern districts. In some places considerable damage to vegetation was caused by the frost, also by drought; and on the 31st all plant life though healthy was somewhat backward, more especially in eastern counties.

The weather in the Province of Quebec was unusually fine, cool and dry, the rainfall being below average everywhere excepting at a few places in the western portion where it was slightly above. During the first ten or twelve days the nights were exceptionally cool, frosts being general, ice forming and snow flurries occurring at many places in eastern districts. In consequence growth in vegetation was much retarded and on the 31st was quite backward.

The weather in New Brunswick though rather cool generally, varied with regard to the rainfall, some places showing a deficiency, more especially in the northern portion: whilst at others in the southern portion it was considerably in excess. Up to the 13th it was exceptionally cool, frost, ice and snow occurring at many places. Warm weather set in late in the month but in all districts vegetation was exceedingly backward.

In Nova Scotia the weather conditions were much the same as in New Brunswick, the temperature being somewhat below average and the rainfall varying with the district, it being slightly deficient in some places and slightly in excess in others. During the first week and on the 25th and 26th it was unusually cool, frosts occurring at many places, and no warm weather occurred until after the 24th. Vegetation was very backward throughout the Province.

The weather in Prince-Edward Island did not differ much from average, it was, however, somewhat cooler than usual, whilst the rainfall was average or slightly below. The nights were exceedingly cool up to the 13th, when light frosts occurred at many places. Plant life was rather backward everywhere. F. F. PAYNE.

#### ATMOSPHERIC PRESSURE.

The mean pressure of the month was just average from Western Ontario to Eastern Manitoba and showed an increasing negative departure to the eastward, westward and northward. The greatest negative departures were between .05 and .07 in the Maritime Provinces and between .08 and .11 in Saskatchewan. In Southern British Columbia it was generally about .01 below average.

#### HIGH AREAS.

Ten high areas have been tracked, and of these seven first appeared over the Canadian Territory and moved in a southerly direction to and off either the Middle or South Atlantic Coast of the United States; as a rule they were not of great extent and the maximum intensity was reached when centred between latitudes 40 and 45. No. 1 was a very normal area which appeared over Alberta on the 1st and passed off the South Atlantic coast on the 5th. Nos. 2 and 3 seem to have been almost subsidiary to No. 1; they appeared in Manitoba, were of small dimensions and passing southeastward across the Lake Region were accompanied by very low temperatures and frost occurred in parts of Ontario. No. 4 passed quickly from Manitoba to the South Atlantic States and No. 5 which was to some extent connected with its predecessors moved eastward across the Dominion from Alberta between the 11th and 17th, and its immediate successor between the 17th and 21st passed south between Keewatin to Kansas and then almost due east. No. 8 first appeared to the northward of the Gulf of St. Lawrence on the 24th and during the next three days drew south and south-west down the Atlantic coast and was then merged in the subtropical belt of high pressure. No. 9 was very similar to its predecessor and moved southward along the Atlantic Coast. No. 10 was confined to the north Pacific States.

#### LOW AREAS.

No. 1 was centred in Manitoba on the 1st and thence moved quickly to the Lake Region where during the transit of the centre on the 2nd local showers occurred. On the 3rd when nearing the Atlantic it was joined by a more important area which we designate as No. 2 and which had moved from the Gulf of Mexico accompanied by a fairly heavy and extensive rainfall. On the morning of the 3rd the storm was near the New Jersey Coast and as it moved thence north-eastward a general rain occurred in the Maritime Provinces and Gulf and a moderate easterly to southerly gale prevailed very generally on the Atlantic and Gulf Coasts. No. 3 hovered for some days over British Columbia and the far North-west Territories, then spread eastward and southward, and local showers occurred in the Canadian Territories on the 6th and 8th. On the morning of the 7th the storm centre was in Arkansas, whence it moved directly into the Lower Lake Region, thence east. There was a general rain in Ontario and Quebec during the 8th, and in the Maritime Provinces early on the 9th. No. 5 appeared over the North-west Territories on the 9th and during four days remained there with increasing energy, the weather within its boundaries being generally fine and decidedly warm with scattered thunder showers. After this it moved quickly eastward across Northern Canada and thunderstorms occurred at many points between Lake Superior and the Maritime Provinces. Nos. 6 and 7—During the latter half of the month many shallow depressions were present over the western and southern portions of the Continent but most of them were so erratic and uncertain in their movements that they have not been tracked. One, however, which passed off the Middle Atlantic coast on the 19th became quite energetic as it moved north-eastward towards Nova Scotia and very heavy rain and high winds were prevalent throughout the Maritime Provinces.

#### WINDS.

During May the winds in all parts of the Dominion were as a rule moderate; the force of a strong breeze was reached but seldom on the Great Lakes; and only two moderate gales, one from the east and the other from

the south-east, occurred in the Maritime Provinces on the 3rd and 20th respectively. In Manitoba and the eastern part of the Territories south-east and east were the prevailing directions; on the Lakes easterly and westerly winds were nearly equal as regards frequency while in other parts of the Dominion the normal westerly direction predominated.

### TEMPERATURE.

The mean temperature of the month exceeded the normal in all parts of the Dominion lying west of a line running approximately northward from the Bay of Quinté to Moose Factory, and was below normal in districts to the eastward including the Ottawa Valley and the whole of Quebec and the Maritime Provinces. The greatest positive departures amounting to between 6 and 8 degrees occurred in Manitoba and Assiniboia and the largest negative departures in parts of Quebec and New Brunswick where 3 below normal was recorded at many stations. In British Columbia generally the normal appears to have been exceeded by from 1 to 2 degrees.

#### *The Highest and Lowest Temperatures in each Province during May, 1900 were:*

British Columbia,	96°·0 on 1st at Griffin Lake.	20°·2 on 31st at Stuart's Lake.
North-west Territories,	99°·0 on 28th at Regina and Gatesgarth.	12°·0 on 2nd at Cannington Manor.
Manitoba,	102°·0 on 12th at St. Albans.	14°·0 on 4th at Winnipeg and on 2nd at Elkhorn.
Ontario,	91°·5 on 14th at Clontarf.	12°·5 on 6th at White River.
Quebec,	87°·5 on 31st at Chicoutimi.	20°·0 on 10th at St. Agathe des Monts.
New Brunswick,	86°·7 on 30th at St. John.	19°·0 on 9th at Bathurst.
Nova Scotia,	83°·3 on 30th at Halifax.	26°·0 on 8th at Parrsboro'.
Prince Edward Island.	80°·0 on 30th at Charlottetown.	30°·0 on 8th at Summerside.

### PRECIPITATION.

The rainfall exceeded the normal in British Columbia, in Alberta and in the more western parts of Saskatchewan and Assiniboia, and in the Maritime Provinces, but was deficient in other parts of the Dominion, except the northern districts of Ontario, Muskoka, Parry Sound and Nipissing, where it was equal to or somewhat in excess of the average. The most marked deficiency occurred in the counties bordering on Lake Ontario between Prince Edward and Toronto where the total fall was less than an inch; and again in Manitoba where the aggregate amount recorded during the month was very generally, but a small fraction of an inch.

### BRIGHT SUNSHINE.

Bright sunshine exceeded the average in Ontario and Manitoba and was a little below average in British Columbia and the Maritime Provinces. The percentage of the possible duration in Ontario ranged from 39 at Durham to 57 at Barrie, and in Manitoba and the Territories from 65 at Winnipeg to 46 at Battleford. In British Columbia the percentage ranged from 31 at Agassiz to 40 at Victoria. The only station which reported from the Maritime Provinces was Fredericton, where the duration was three per cent of the possible less than average.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, MAY, 1900.

\* Stations not furnished with Registering Thermometers.

[illegible]



PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA. MAY, 1900.

• Stations not furnished with Registering Thermometers

[illegible]

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PRECIPITATION AT STATIONS REPORTING RAIN, SNOW AND WEATHER, DURING  
MAY, 1900.

STATIONS	RAINFALL					SNOWFALL				REMARKS.
	Amount in inches.	No. of Days or Over	No. of Fm Days	Heaviest Fall in Month.	Date.	Amount in inches.	No. of Days	Heaviest Fall in Month.	Date.	
<b>BRITISH COLUMBIA</b>	in.			in.		in.		in.		
Goldstream Lake	2.61	17	14	0.35	24					
Royal Oak	1.45	14	17	0.35	7					
Vancouver (1)	1.71	21	10	0.97	7					
Vancouver (2)	1.33	17	14	0.68	27					
Langley	1.98	19	12	1.18	15					
Nanaimo	3.73	13	18	1.51	25					
Nass Harbor	5.07	20	11	1.23	8					
Port Essington	6.87	61	7	1.35	27					
<b>N. W. TERRITORIES</b>										
Crescent Lake	1.15	6	25	0.45	25					Thunder on 6th.
Conits	1.82	5	26	1.30	12 13					Thunder on 5, 8, 10, 11, 16, 22, 26.
W. Beaver Hills	2.84	14	17	0.95	22 23					Thunder on 28th.
Salcoats	0.58	5	26	0.15	11					
Rouleau	2.88	5	26	1.15	28					
N. E. Beaver Hills	5.47	14	17	2.38	16 17					
Didsbury	2.24	5	26	1.76	21 22					
Imperial	2.20	6	25	1.30	22					
<b>MANITOBA</b>										
Oak Lake	1.05	3	28	0.43	11					27th, terrible wind storm.
Pendula Crossing	R		27							Thunder 12th, 23d, 29th.
Deloraine	0.69	5	26	0.60	31					
Hartney	0.25	3	28	0.13	15					
Norway	0.20	1	29	0.20	15					
Cartwright (1)	0.82	3	28	0.76	31					Thunder, 23rd.
Selkirk	0.18	2	29	0.10	15					
Cartwright (2)	0.67	2	29	0.62	31					
Rapid City	0.20	1	29	0.20	22					
Morden	0.10	1	29	0.10	22					
Belmont	0.10	1	29	0.10	15					Thunder, 22nd, 29th.
Elgin	0.19	1	25	0.15	29					Thunder, 9th, 13th.
Oakbank	0.18	1	22	0.09	23					
<b>ONTARIO</b>										
Nottawasaga Island	3.00	8	23	0.80	8					Fog on 8 days.
Glen Elgin	2.33	9	20	1.11	7					Ice $\frac{1}{2}$ ins. on 10th.
Elgin	2.11	1	23	1.00	8		2			Froze hard on 10th.
Providence Bay	2.52	6	25	1.10	30		4			
Princeton	0.97	6	25	0.33	27					
Penetanguishene	2.66	9	22	0.97	8					$\frac{1}{2}$ ins. ice on 5th.
Ennismore	1.15	1	30	1.15	8					
Ensdale	4.39	11	19	1.24	8					Hard frost 9th, 10th.
Ursa	2.81	9	22	0.81	8					
Deer Park	1.13	5	26	0.58	8					
Wyoming	3.90	6	24	1.43	8					
Kitley	2.00	7	24	0.61	8					
Oliver's Ferry	2.20	3	28	1.50	8					
Dealtown	2.28	8	23	0.97	31					Ice, snow and rain on 4th.
Lynedoch	0.92	6	25	0.40	29					
Huntsville	3.54	9	22	1.18	8					
Amora	0.70	1	27	0.46	8					
Lion's Head	3.71	7	24	1.16	8					
Warton	2.32	5	26	0.91	8					
Jermyn	1.05	3	28	0.55	9					
Midland	2.96	9	22	0.65	8					
Apslen	2.38	9	22	0.70	9					
Watford	2.98	5	26	1.31	8					
Dutton	2.47	6	24	0.75	7		1			4th, ice.
Scarboro'	0.72	5	22	0.54	8					4th, snow.
Wilton Grove	2.41	12	19	0.81	8					
Lansdowne	1.41	6	25	0.72	8					
Parma	1.04	5	26	0.32	9					
Cherry Valley	0.76	3	28	0.41	15					
Wooler	1.04	6	25	0.54	8					
Port Burwell	1.99	8	23	0.52	27					
Sunshine	1.76	6	25	1.33	8 9					
Meatigue	2.06	5	26	1.09	8 8					
North Williamsburg	3.19	5	26	1.75	8 9					3rd, snow.
Georgetown	1.44	7	19	0.77	8					6th, ice $\frac{1}{2}$ in.
Uxbridge	0.97	3	28	0.78	8					
Orangeville	1.15	6	25	0.12	8					
Goderich	1.91	3	28	1.50	8					
<b>NEW BRUNSWICK -</b>										
Point Esquimaux	2.90	12	19	1.28	20					
<b>NOVA SCOTIA -</b>										
Port Morden	1.77	7	24	0.55	15					
<b>P. E. ISLAND -</b>										
Mount Stewart	2.72	1	27	1.04	9					
Murray River	1.99	8	23	0.69	20					



*Thunder recorded on*

1. London.
2. Coldwater, Stratford, Midland, Whiteside, Point Clark, Bancroft.
3. Sunshine, Reclamation Works, Victoria.
4. Stuart's Lake.
5. Rossland, Swift Current, Athabasca Landing.
6. Barnardo, Guelph, Seannerside, Indian Head, Cannington Manor, Swift Current, Battleford.
7. Barnardo, Midland, Dutton, Aurora, Dealtown, Lucknow, Point Clark, St. Ann's, Welland, Stony Lakefield, Ridgetown, Hamilton, Brantford, Birnam, Battleford.
8. London, Coldwater, Guelph, Stratford, Georgetown, Dutton, Scarboro, Wilton Grove, Wooler, Port Burwell, Sunshine, Lion's Head, Wiarton, Wyoming, St. Ann's, Erasmus, Ridgetown, Otonabee, Meaford, Agincourt, Dunnville, Hamilton, Port Dover, St. George, Port Stanley, Saugeen, Barkerville, Toronto.
9. Oakbank, Halifax, Yarmouth.
10. Barnardo, Stony Mountain, W. Beaver Hills, Kneehill, Muskowpetung, Calgary, Reclamation Works, Medicine Hat, Qu'Appelle, Banff, Barkerville.
11. W. Beaver Hills, Elkhorn, Cannington Manor, Calgary, Ridgetown, Swift Current, Battleford, Athabasca Landing, Oonikup.
12. London, Guelph, Portage la Prairie, Moosomin, Kneehill, Crane Lake, Welland, Ridgetown, Stony Creek, Dunnville, Hamilton, Paris, Port Stanley, Swift Current, Battleford, Oonikup.
13. Gravenhurst, Deseronto, Abitibi, Lansdowne, Huntsville, Oakbank, Emsdale, Ursa, Kitley, Elgin, Ont., Moosejaw, N. Nicomen, Haliburton, Whiteside, Beatrice, Bancroft, Renfrew, Clontarf, St. George, Bissett, Swift Current, Haileybury.
14. Ste. Anne de la Poudre, Wooler, Huntsville, Emsdale, Haliburton, Whiteside, Beatrice, Bancroft, Peterboro', Otonabee, Meaford, Port Hope, St. George, Birnam, Collingwood, Grand Manan, Quence, White River, Parry Sound, Port Arthur, St. Agathe des Monts.
15. Gravenhurst, Deseronto, Abitibi, Jernyn, Arden, Dutton, Wilton Grove, Port Burwell, Montague, N. Williamsburg, Emsdale, Wyoming, Elgin, Ont., St. Ann's, Welland, Stony Creek, Dunnville, Hamilton, Port Dover, Brantford, Halifax, Yarmouth, Grand Manan, Port Stanley, Montreal, Wolfville.
16. Arden, Lion's Head, Kitley, Red Deer, Calgary, Stuart's Lake, Orillia.
17. Brome, Scarboro, Wooler, Wiarton, Providence Bay, Point Clark, Erasmus, Clontarf, Otonabee, Agincourt, Toronto, Durham.
18. Guelph, Meaford, Yarmouth.
19. Red Deer, Kneehill, Yarmouth, Montreal, Swift Current.
20. Lindsay, Wooler, Wyoming, Crane Lake, Stuart's Lake, Port Hope, Swift Current, Athabasca Landing.
21. Didsbury, Arden, Belmont, Aweme, Reclamation Works, Stuart's Lake, Prince Albert.
22. N. Beaver Hills, Elgin, Aweme, Brandon, Minnedosa, Battleford.
23. Selkirk, Pembina Crossing, Pipestone, N. Nicomen, Okanagan Mission, Griffin Lake, Nicola Lake.
24. Gravenhurst, Huntsville, Emsdale, Ursa, Elkhorn, Haliburton.
25. Lion's Head, Stuart's Lake, Bancroft.
26. Coldwater, W. Beaver Hills, Emsdale, Cockburn Island, Prince Albert, Haileybury.
27. London, Whiteside, Coldwater, Lindsay, Midland, Dutton, Wilton Grove, Wiarton, Kitley, Point Clark, Providence Bay, Moosomin, Cannington Manor, N. Nicomen, Lucknow, Haliburton, Erasmus, Ridgetown, Clontarf, Sturgeon Falls, Owen Sound, Meaford, Durham, Chatham, Port Dover, Birnam, Port Stanley, Saugeen, Medicine Hat.
28. Rouleau, Wilton Grove, Sunshine, Gatesgarth, Muskowpetung, Point Clark, Erasmus, Sarnia, Stony Creek, Saugeen, Oonikup.
29. Elgin, Providence Bay, Hillview, Pembina Crossing, Pipestone, Brandon, Crane Lake, Minnedosa, Oonikup.
30. Dutton, Scarboro, Aurora, Kneehill, St. Ann's, Agincourt, Stony Creek, Hamilton, White River, Toronto.
31. London, Georgetown, Scarboro, Wyoming, Dealtown, Agincourt, Father Point, Port Stanley, Wolfville.

*Aurora recorded:—*

Where the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the palest, and III the brilliancy.

1. Moosejaw, Cannington Manor, Aweme, IV; Pembina Crossing, IV; Minnedosa, III; Battleford, II.
2. Minnedosa, III; Medicine Hat, II; Battleford, IV.
3. Channel Island, IV.; Haileybury, IV.
4. Lindsay, IV; Calgary, III; Moosejaw, Cannington Manor, Red Deer, III; Hillview, III; Aweme, I; Pembina Crossing, IV; Cartwright, *fine*; W. Beaver Hills, II; Father Point, II; Minnedosa, II; Medicine Hat, IV; Qu'Appelle, IV; Toronto, III.

5. Hillview, 11th ; Pembina Crossing, IV ; Montreal, 1 ; Battleford, 111
10. Beatoee, IV.
11. Pembina Crossing, IV.
12. Pembina Crossing, IV.
13. Chicoutimi.
18. Father Point, 111 ; Durham, Haileybury, IV
20. Sturgeon Fall, IV ; Haileybury, IV
21. Sturgeon Fall, IV
24. Chicoutimi.
25. Hillview, IV ; Pembina Crossing, IV.
26. Battleford, IV
28. Haileybury, IV
29. Chicoutimi, Pembina Crossing, IV ; Father Point, 11.
30. Cape Chatte, 111 ; Pembina Crossing, IV.

#### *Appearance of Spring Birds*

*Sparrows*—Qu'Appelle, 11th ; Banff, 11 ; Barkerville, 5th ; Wooley, 3rd ; Red Deer, 6th ; N. Nicomen, 11th ; Erasmus, 6th ; Owen Sound, 21st ; Brantford, 15th.

*Humming Birds*—Qu'Appelle, 11th ; Beatrice, 21st ; Lakefield, 18th ; Owen Sound, 1st.

*Wrens*—Qu'Appelle, 16th ; Georgetown, 10th ; Pembina Crossing, Norquay, 16th ; Owen Sound, 2nd.

*Orioles*—Qu'Appelle, 23rd ; Georgetown, 10th ; Pembina Crossing 20th ; Lucknow, 12th ; Lakefield, 10th ; Stonville, 9th ; Owen Sound, 10th ; Brantford, 15th ; Agincourt, 7th ; Toronto, 7th.

*Robins*—Barkerville, 5th.

*Catbird*—Georgetown, 10th ; Toronto, 9th.

*Kingfisher*—Richmond, 11th ; Lakefield, 15th.

*Whip-poor-will*—Pembina Crossing, 7th ; Oakbank, 13th ; Toronto, 6th.

*Canaries*—Pembina Crossing, 12th ; Richmond, 18th ; Erasmus, 14th ; Lakefield, 10th.

*Kingbird*—Pembina Crossing, 15th ; Owen Sound, 30th.

*Bobolink*—St. Stephen, 26th ; Erasmus, 11th.

*Red Bird*—Owen Sound, 17th.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING 1901, WHEN THE SUN WAS ABOVE  
THE HORIZON IN THE MONTH OF MAY, 1901.

	HOURS ENDING															
	5 A.M.	6 A.M.	7 A.M.	8 A.M.	9 A.M.	10 A.M.	11 A.M.	NOON	1 P.M.	2 P.M.	3 P.M.	4 P.M.	5 P.M.	6 P.M.	7 P.M.	8 P.M.
VICTORIA .....	.....	0.66	0.22	0.35	0.49	0.45	0.48	0.58	0.65	0.69	0.69	0.58	0.44	0.21	0.21	.....
KUPER ISLAND.....	.....	0.04	0.17	0.28	0.33	0.37	0.49	0.40	0.26	0.17	0.17	0.49	0.51	0.17	0.17	.....
AGASSIZ.....	.....	0.00	0.15	0.26	0.37	0.35	0.48	0.49	0.45	0.46	0.43	0.40	0.36	0.17	0.19	.....
BATTLEFORD.....	0.29	0.47	0.55	0.52	0.54	0.8	0.63	0.70	0.65	0.50	0.44	0.41	0.35	0.28	.....	0.01
INDIAN HEAD.....	.....	0.66	0.21	0.61	0.62	0.66	0.65	0.71	0.74	0.68	0.7	0.71	0.74	0.52	0.26	0.2
BRANDON.....	0.16	0.48	0.54	0.69	0.72	0.77	0.76	0.75	0.76	0.66	0.5	0.68	0.74	0.27	0.8	0.01
WINNIPEG.....	0.08	0.60	0.78	0.70	0.72	0.75	0.83	0.89	0.86	0.77	0.74	0.73	0.68	0.64	0.56	0.01
DURHAM.....	0.00	0.11	0.29	0.38	0.50	0.50	0.48	0.50	0.48	0.48	0.55	0.54	0.48	0.41	0.54	0.00
WOODSTOCK.....	0.00	0.04	0.30	0.62	0.64	0.69	0.65	0.65	0.64	0.67	0.67	0.71	0.57	0.49	0.21	0.01
TORONTO.....	.....	0.04	0.38	0.64	0.66	0.69	0.66	0.77	0.70	0.71	0.67	0.76	0.73	0.75	0.26	0.01
LINDSAY.....	.....	0.16	0.32	0.56	0.61	0.70	0.73	0.68	0.66	0.66	0.65	0.67	0.55	0.46	0.34	0.05
BARRIE.....	.....	0.25	0.57	0.62	0.64	0.67	0.71	0.71	0.70	0.74	0.72	0.77	0.76	0.78	0.15	0.00
KINGSTON.....	0.60	0.19	0.52	0.61	0.65	0.64	0.62	0.69	0.71	0.67	0.68	0.58	0.55	0.47	0.17	0.06
OTTAWA.....	0.00	0.21	0.49	0.55	0.63	0.67	0.65	0.70	0.71	0.71	0.64	0.64	0.54	0.46	0.2	0.00
MONTREAL.....	0.00	0.13	0.42	0.47	0.58	0.63	0.71	0.64	0.57	0.60	0.55	0.54	0.54	0.34	0.14	0.00
FREDERICTON.....	0.00	0.23	0.54	0.55	0.55	0.55	0.55	0.55	0.54	0.54	0.45	0.39	0.39	0.35	0.27	0.00

	VICTORIA.	KUPER ISLAND.	AGASSIZ.	BATTLEFORD.	INDIAN HEAD.	BRANDON.	WINNIPEG.	DURHAM.	WOODSTOCK	TORONTO.	LINDSAY.	BARRIE.	KINGSTON.	OTTAWA.	MONTREAL.	FREDERICTON.
MEAN PROPORTION FOR MONTH..... (Constant sunshine being 1.)	0.40	0.35	0.31	0.46	0.50	0.51	0.65	0.39	0.51	0.55	0.52	0.57	0.52	0.52	0.54	0.44
DIFFERENCE FROM AVERAGE.....	0.01	- 06	- 01	- 01	0.05	0.08	0.12	-	0.06	0.07	- 05	0.14	0.04	-	0.03	-0.03
MAXIMUM DAILY AMOUNT.....	0.82	0.82	0.76	0.91	0.81	0.89	0.92	0.87	0.91	0.88	0.95	0.87	0.85	0.82	1.00	0.92
DATE.....	1-31	31	31	3	16	18	17	19	13	1	4	19	7	12	22	25
NO. OF DAYS COMPLETELY CLOUDED.....	2	1	1	1	1	1	2	10	3	0	1	3	3	4	4	7

## FORECASTS FOR MAY, 1900.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 915. These were divided as follows :—

District.	Verdict.				Percentage.
	No. Issued.	No. Fully Verified.	No. Partly Verified.	No. Not Verified.	
Manitoba	93	83	2	8	90.3
Lake Superior	95	72	10	13	81.1
Lake Lake Region	101	89	5	7	90.6
Georgian Bay	102	88	5	9	88.7
Ottawa Valley	96	75	8	13	82.3
Upper St. Lawrence	96	76	8	12	83.3
Lower St. Lawrence	109	86	9	14	83.6
Gulf of St. Lawrence	111	90	10	11	85.6
Maritime Provinces	112	85	17	10	83.5
Total	915	741	74	97	85.4

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

*Director.*

Meteorological Office, Toronto,

26th June, 1900.

ABSTRACT OF OBSERVATIONS AT DAWSON CITY, YUKON TERRITORY, FROM NOVEMBER, 1898,  
TO APRIL, 1900, INCLUSIVE.

	BAROMETER AT 32.			TEMPERATURE.					
	Mean.	Highest.	Lowest.	Mean Maximum.	Mean Minimum.	Mean Daily Range.	Mean Monthly.	Absolute Highest.	Absolute Lowest.
1898.	in.	in.	in.				°		°
November.....	28.73	29.57	28.13	6.5	16.9	10.4	-11.7	23.2	-41.0
December.....	28.65	29.88	27.87	3.1	-7.3	10.4	2.1	38.3	-41.2
1899.									
January.....	28.75	29.38	27.98	-15.7	26.8	11.1	-21.2	2.0	-44.6
February.....	28.87	29.69	27.72	-3.9	19.6	15.7	-11.8	7.4	-41.4
March.....	28.97	29.37	28.54	22.1	-10.1	32.2	6.0	51.0	-34.2
April.....	28.60	29.15	28.02	54.2	21.5	32.7	37.9	67.1	3.0
May.....	28.63	29.03	28.17	65.4	34.7	30.7	50.1	84.6	17.0
June.....	28.66	28.97	28.20	73.5	16.4	27.1	59.9	90.0	39.3
July.....	28.86	29.27	28.55	80.9	50.6	30.3	65.7	94.6	40.6
August.....	28.72	29.23	28.47	72.1	15.9	26.2	59.0	85.2	30.0
September.....	.....	29.05	28.35	.....	.....	.....	.....	78.5	21.2
October.....	28.72	29.17	28.16	26.1	10.4	15.7	18.2	62.0	9.6
November.....	28.47	28.98	27.95	14.7	6.7	8.0	10.7	30.3	15.0
December.....	28.80	29.76	27.90	-13.1	-21.5	8.4	-17.3	17.6	-49.5
1900.									
January.....	28.83	29.55	28.02	17.3	-30.2	12.9	-23.7	6.6	-55.5
February.....	29.01	29.72	28.28	1.9	-15.8	13.9	-8.9	18.5	-44.0
March.....	28.89	29.64	28.51	23.0	-2.9	25.9	10.1	51.6	-41.2
April.....	28.55	29.21	27.98	43.1	23.3	19.8	33.2	50.8	2.3



## METEOROLOGICAL SERVICE, DOMINION OF CANADA.



# Monthly Weather Review.

VOL. XXIV

JUNE, 1900.

No. 6

## INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

## REMARKS UPON THE WEATHER.

The chief characteristics of the weather of June were the high mean temperature of Nova Scotia, the Lower Lake Region and westward from the Lakes to the Pacific Coast, the unusually heavy rainfall in portions of British Columbia, the light rainfall in portions of Manitoba and Ontario and the large amount of sunshine east of the Territories to the Atlantic Coast. With the exception, however, of the temperature of the Territories and the excessive bright sunshine referred to, also some quite local abnormal conditions the departures were nowhere very great. Light frosts occurred at a few places in each Province, but very little damage was caused thereby. Vegetation was somewhat damaged by drought and great heat in the more central portions of the country, but with these exceptions the condition of plant life was most favourable.

The weather of British Columbia did not differ much from the normal, but in most districts the mean temperature was somewhat higher and the rainfall was rather excessive, more especially over the Islands, along the Coast, and in northern districts. During the first half of the month cool dull weather was more prevalent and in the northern portion light frosts occurred at some places, nevertheless the condition of vegetation on the 30th was excellent.

In the North-west Territories the weather was exceptionally warm and somewhat dryer than usual, the mean temperature exceeding the average in most districts and the rainfall with few exceptions being below. Excessively high temperatures occurred upon several occasions, 106° being recorded at several places, and 109° being reported from Chaplin on the 22nd. These temperatures added to drought, frequent high winds, not much bright sunshine, and light frosts in some places were not very favourable for vegetation, and on the 30th it had a rather withered appearance in most districts.

The weather conditions in Manitoba were somewhat similar to conditions in the Territories, excepting that the drought was considerably more severe in the former province where there was also much more bright sunshine. Temperatures up to 106° were recorded at several places on or about the 23rd. Reports regarding vegetation were generally unfavourable, farm crops in many places being scorched and withered.

In Ontario the weather was somewhat abnormal though the departures were nowhere very great. In districts contiguous to the Lower Lakes the mean temperature in most places exceeded the average, whilst elsewhere it was about normal; and the rainfall, though rather excessive at a few places more especially in northern districts, was generally below average. Throughout the month there was much bright sunshine; and an absence of thunderstorms of any importance or damaging frosts lent much towards the favourable condition of vegetation which generally prevailed.

In the Province of Quebec the weather was rather cooler than usual along the Lower St. Lawrence Valley where the rainfall was generally below average, and somewhat warmer than usual in the western portion of the Province, where on the contrary the rainfall was generally above average. These abnormal conditions, however, were not important, and owing, doubtless, to much bright sunshine and the absence of any damaging frosts the condition of plant life throughout the Province was normal.

The weather in New Brunswick was characterized by rather low temperatures and heavy rainfall in most districts, but at a few places these conditions were quite reversed, and the excessive precipitation reported fell on comparatively few days. Much fine weather prevailed during the month, the amount of bright sunshine being generally above average, and by the 30th, no damage having been done by frost, the condition of vegetation was very favourable.

In Nova Scotia the weather was unusually fine and warm, the temperature being above average generally, whilst the rainfall, which was above average in some districts was below in others. In a few districts drought affected vegetation slightly, but generally the condition of plant life on the 30th was excellent.

The weather in Prince Edward Island did not differ much from the normal, the rainfall, however, was below average in some portions of the Province where excessive drought was also reported. Reports from Murray River state that the weather was unusually cold, whilst at Charlottetown the temperature was above average. Reports regarding vegetation were not favourable.—F. F. PAYNE.

#### MEAN ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was slightly higher than normal over Manitoba and the extreme western portion of Ontario and lower than normal in all other parts of the Dominion; the largest negative departures amounting to between 0.05 and 0.08 of an inch occurred in British Columbia and Alberta and also near the shores of the Gulf of St. Lawrence.

#### HIGH AREAS.

No. 1 was centred in Montana on the 1st; during three days it moved east and southeast and on the 4th, it seems to have become merged near the Atlantic Coast in what was apparently a northerly extension of the sub-tropical belt of high pressure, which then during the next few days gradually receded seaward. No. 2 was first observed over the North-west States and Manitoba on the 8th, it passed southeastward across the Lake Region on the 9th, and from the Atlantic Coast on the 10th and 11th. No. 3 may be traced from the Pacific States; it was centred in Wyoming on the 10th, it moved eastward, passed across the Lake Region and St. Lawrence Valley on the 12th, and then southeast from the Atlantic Coast on the 13th and 14th. No. 4 was observed in the Canadian North-west Territories on the 12th, and during three days moved eastward to the Lake Region; there was then little change in position until the 20th when it showed a southeasterly movement, and by the following day had passed from the South Atlantic Coast. After this cyclonic conditions prevailed generally until the 28th when No. 5 appeared in the Canadian North-west Territories, and moved slowly eastward in rear of the storm, which had developed over the Upper Lakes during the night of the 29th.

#### LOW AREAS.

The most abnormal and important feature of the month as regards pressure changes was the development of an important storm over the Upper Lakes towards the end of the month, causing a gale of unusual severity in summer.

No. 1 developed over the Western States, and moved eastward to the Lake Region as a pronounced disturbance accompanied by a heavy rainfall. During the 2nd, it passed to New England with diminishing energy and on the following day disappeared off the Coast. No. 2 appeared over British Columbia on the 1st, and for four days it changed its position but little; it then progressed eastward as a shallow and widespread area within the boundaries, of which local showers were prevalent; it reached the Province of Quebec on the 8th, and passed across the Gulf of St. Lawrence on the 9th. The first indications of No. 3 were observed in Alberta on the 7th, and by the following morning a decided low was centred either in Assiniboia or Montana; it moved steadily eastward passing across the Lake Region on the 10th, and thence quickly to the Gulf. Throughout its course it was attended by scattered showers and thunderstorms. No. 4 between the 10th and 14th was not unlike its predecessor moving from Alberta to the Lower St. Lawrence attended by local showers. After reaching the Lower St. Lawrence, however, there was a marked development, a general rain occurring in Eastern Quebec and Maritime Provinces, which in the Gulf was followed by a fresh westerly gale.

A period of minor changes now followed, the pressure continuing low over the western and southern parts of the Continent and comparatively high in the east and north, the weather the while being intensely hot in the Canadian North-west Territories.

No. 5 between the evening of the 20th and the 24th there was a rather abnormal movement of a low from Minnesota to the Southern States. This movement was followed between the 25th and 28th by one (No. 6) from the North-west States directly towards and across the Lake Region. No. 7. During the night of the 28th there was a very rapid and pronounced storm development, and by the morning of the 29th, a storm of decided energy was centred in the Upper Ottawa Valley and a fresh northwesterly gale was blowing on Lakes Superior and Huron. The storm centre moved slowly to the Gulf of St. Lawrence, while a fresh cold northwest gale continued for two days on the Lakes and in the St. Lawrence Valley, and strong winds were generally prevalent in the Maritime Provinces.

#### WINDS.

Southwest and west were the preponderating wind directions in all parts of the Dominion except in Saskatchewan, where apparently the easterly directions were slightly in excess. Perhaps the most marked



feature of the month as regards the winds was a fresh westerly gale, which occurred on the lakes during the 29th and 30th when velocities of from thirty to forty miles occurred. A fresh northwesterly gale blew in the Gulf of St. Lawrence on the 23rd. A very strong northeast wind occurred at Quebec on the 3rd, and again on several days towards the close of the month. No storm warnings were issued.

#### BRIGHT SUNSHINE.

Bright sunshine exceeded the average in the Province of Manitoba and throughout the Dominion lying to the eastward. The percentage of the possible duration in Manitoba ranged somewhat over 60; in Ontario it ranged from 54 at Durham to 70 at Toronto. At Montreal 69 was registered, and at Fredericton, N.B., 54, both being considerable above average. In the North-west Territories the percentage reported was considerable below average and ranged from 36 at Indian Head to 52 at Battleford, and in British Columbia from 35 at Agassiz to 40 at Victoria.

#### TEMPERATURE.

The mean temperature was equal to or above average over the whole Dominion, excepting in the Upper Ottawa Valley, the Districts of Algoma and Nipissing, and in some few localities in Eastern Ontario. The greatest positive departures, about 1°, occurred in Manitoba and Assiniboia, and the largest negative departures reported were 2° at both White River and Bissett in Ontario. Extremes were pronounced, and especially so in Manitoba and the Territories, where from 6th to 8th, and on 13th a cold wave prevailed, and frost was recorded in many parts. This was followed about the middle of the month by intense heat, and June 21st to 23rd, the temperature rose above 100° in most localities.

*The Highest and Lowest Temperatures in each Province during May, 1900 were :*

British Columbia,	108°·0 on 27th at Griffin Lake.	28°·0 on 8th at Barkerville.
North-west Territories,	109°·0 on 22nd at Chaplin.	27°·7 on 12th at Banff.
Manitoba,	107°·0 on 23rd at Aweme.	24°·0 on 8th at Hillview.
Ontario,	96°·0 on 27th at Bognor.	24°·8 on 9th at White River.
Quebec,	93°·0 on 20th at St. Anne de la Pocatiere.	30°·0 on 3rd at Father Point.
New Brunswick,	90°·0 on 20th at Bathurst.	31°·0 on 26th at Bathurst.
Nova Scotia,	83°·0 on 28th at Truro.	30°·8 on 5th at Truro.
Prince Edward Island,	78°·0 on 13th at Charlottetown,	34°·0 on 4th at Hamilton.

#### PRECIPITATION.

The rainfall was in excess of the normal in British Columbia and Alberta; also in some few localities in the more eastern and central counties of Ontario, in the Eastern Townships and in New Brunswick, near the Bay of Fundy. In Manitoba and the larger portion of the Territories, however, there was a pronounced drought, and a deficiency was also marked in Ontario, near the shores of the Great Lakes. In Alberta the rainfall seems to have been ample. On June 8th there was an all day snowstorm over the greater portion of Alberta; four inches lay on the ground in some localities. In Manitoba there was scarcely any rain until quite the end of the month, after great damage had been done by drought, high winds and intense heat. The only really good rain in Southern Ontario occurred on the 1st when over an inch fell.

## PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JUNE, 1900.

a Barometer not reduced to Sea Level • Stations not furnished with Registering Thermometers

STATION.	Latitude N.	Longitude W.	Elevation above Sea Level, in feet.	PRESSURE.		TEMPERATURE.				DIRECTION OF WIND FROM						VELOCITY OF WIND.		PRECIPITATION.		No. of days with 49 or more.	No. of Anomalous.	No. of Thunder-storms.	No. of Fogs.										
				Mean reduced.	Range.	Mean.	Difference from average.	Highest.	Lowest.	Date.	Mean daily range.	Mean relative humidity.	Mean amount of cloud.	No. of days completely clouded.	N.	N. E.	E.	S. E.	S.					W.	N. W.	C.	Total number of hours.	Mean miles per hour.	Highest days velocity.	Date and direction from.	Amount.	Difference from average.	Heaviest fall in month.
BRITISH COLUMBIA:																																	
Victoria	48 21 123 19	85	29 96 20 33	29 66 0 65	57 9	57 9	1 6 10 7 4	13	45 3	7 12 3	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Barkerville	53 11 121 35	4180	29 80 34 24	29 40 0 84	53 0	53 0	2 3 12 8 0	17	58 0	8 24 3	2 3 12 8 0	67	7	9	12	1	0	0	3	51	0	24	0	0	90	29 0	29 0	19 S	5 01	5 01	0	0	0
Akwash	49 11 121 31	52	29 80 34 24	29 40 0 84	53 0	53 0	2 3 12 8 0	17	58 0	8 24 3	2 3 12 8 0	67	7	9	12	1	0	0	3	51	0	24	0	0	90	29 0	29 0	19 S	5 01	5 01	0	0	0
Abbotsford	49 11 121 31	52	29 80 34 24	29 40 0 84	53 0	53 0	2 3 12 8 0	17	58 0	8 24 3	2 3 12 8 0	67	7	9	12	1	0	0	3	51	0	24	0	0	90	29 0	29 0	19 S	5 01	5 01	0	0	0
Port Simpson	54 34 126 26	215	29 89 30 22	29 66 0 65	57 9	57 9	1 6 10 7 4	13	45 3	7 12 3	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Spence's Bridge	50 23 121 30	570	29 89 30 22	29 66 0 65	57 9	57 9	1 6 10 7 4	13	45 3	7 12 3	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Healdsburg	49 3 122 43	175	29 89 30 22	29 66 0 65	57 9	57 9	1 6 10 7 4	13	45 3	7 12 3	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Revelstoke	51 0 118 6	1576	29 89 30 18	29 62 0 55	53 4	53 4	1 6 10 7 4	13	42 0	9 14 5	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Prairie	49 29 120 29	1650	29 89 30 18	29 62 0 55	53 4	53 4	1 6 10 7 4	13	42 0	9 14 5	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Kamloops	50 41 120 29	1193	29 89 30 18	29 62 0 55	53 4	53 4	1 6 10 7 4	13	42 0	9 14 5	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Pilot Bay	49 38 126 35	1800	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Rivers Inlet	51 30 127 19	1800	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Stuart's Lake	54 35 124 12	1800	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
French Creek	49 29 121 36	680	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Glacier	51 16 117 35	4072	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Donald	51 25 117 11	2000	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Griffin Lake	50 53 119 15	1517	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Yukon	50 53 119 15	1517	29 95 30 31	29 45 0 89	55 6	55 6	1 6 10 7 4	13	39 0	9 19 7	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Kuper Island	48 58 123 58	1296	29 97 30 29	29 75 0 51	62 0	62 0	1 6 10 7 4	13	38 0	9 21 6	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Chilliwack	49 10 121 57	57	29 97 30 29	29 75 0 51	62 0	62 0	1 6 10 7 4	13	38 0	9 21 6	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Quashno	50 32 128 3	1800	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Midway	49 0 118 46	1180	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Endicott	49 0 118 46	1180	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Nicola Lake	50 32 119 11	1180	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Chilcotin	52 2 124 40	2170	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
West Kootenay	49 21 123 17	2900	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Garry Point	49 21 123 17	2900	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Tobacco Plains	49 18 123 4	195	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Vanouver	49 18 123 4	195	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
New Westminster	49 13 123 54	330	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Ladner	49 5 123 4	330	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
N. Nicome	49 12 123 2	330	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Quebec	46 51 71 57	1700	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	
Chapouit	49 11 125 17	1700	29 95 30 26	29 70 0 46	61 5	61 5	1 6 10 7 4	13	40 0	9 23 0	1 6 10 7 4	67	6	9	28	21	26	32	206	129	163	29	91	730	6 7	17 0	30 W	10 16 10 12	10 16 10 12	0	0	0	



# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JUNE, 1900.

a. Barometer not reduced to Sea Level • Stations not furnished with Registering Thermometers

STATION.	Latitude N.	Longitude W.	Elevation above Sea Level, in feet.	PRESSURE.		TEMPERATURE.				Mean relative humidity.	No. of days completely clouded.	DIRECTION OF WIND FROM						VELOCITY OF WIND.			Amount.	Difference from Average.	Heaviest fall in month.	Days with 1/10 or more No. of hours.	No. of Auroras.	No. of Thunder storms.	No. of Fog.										
				Mean reduced.	Highest.	Lowest.	Range.	Mean.	Difference from average.			Years observed.	Highest.	Lowest.	Date.	Mean daily range.	Mean temperature of day.	Mean relative humidity.	N.	N. E.								E.	S. E.	S.	W.	W. N. W.	C.	Total number of hours.	Mean per hour.	Highest day's velocity.	Date and direction.
ONTARIO—(Continued.)																																					
St. Mary's.....	43 15	81 11	1049					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	6	4	2	3	15	26	12	7	90					5.0	—0.0	0.0	1	0	0	0
Biscuiting.....	47 3	78 20						60.6	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	114	20	15	18	27	10	131	64	214					1.00	—0.0	0.0	1	0	0	0
North Bay.....	46 34	79 20						56.1	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	81	186	13	13	14	52	31	27	133					1.00	—0.0	0.0	1	0	0	0
White River.....	48 35	81 12	1252					55.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	81	186	13	13	14	52	31	27	133					1.00	—0.0	0.0	1	0	0	0
Port Arthur.....	45 15	80 6	614					62.5	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Perry Sound.....	45 15	80 6	614					62.5	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Saugeen.....	44 30	81 21	656					62.5	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Owen Sound.....	44 34	80 55	397					62.5	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Upplands.....	45 48	79 25						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Durham.....	44 10	80 50	359					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Toronto.....	43 39	79 17						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Welland.....	43 39	79 17						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Peterborough.....	44 17	79 19	722					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Landau.....	44 26	79 45	875					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Lakefield.....	44 11	77 4	264					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Dorchester.....	44 11	77 4	264					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Ridgeway.....	44 30	81 65						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Kings on.....	44 13	79 29	285					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Clontarf.....	45 26	79 39						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Renfrew.....	45 26	79 39						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Panorait.....	45 26	79 39						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Ottawa.....	45 26	79 39						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Bisset.....	46 12	77 55	557					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Mattawa.....	46 15	78 41						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Cartier.....	46 40	80 50						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
St. Anne's.....	43 40	79 32						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Stouville.....	43 56	79 11	546					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Sarnia.....	42 59	82 29						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Millbrook.....	44 8	82 16						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Stratford.....	43 53	81 30	1191					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Lacknow.....	43 56	81 30						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Corbin.....	42 7	82 45						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Brantford.....	43 10	80 21	740					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Conestogo.....	42 59	80 29						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Stony Creek.....	43 33	79 45	292					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Acme.....	43 47	79 16						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Pickering.....	43 39	79 4						61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Hamilton.....	43 16	79 54	303					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Port Hope.....	43 16	79 54	303					61.7	—0.1	11 57.0	26	44.0	3.21	3	3	3	3	149	22	41	27	106	90	83	106	212					1.00	—0.0	0.0	1	0	0	0
Kincora.....	44 42	78 42	614					61.7																													

Quebec—(Continued.)														
Quebec Point	48 31 68 10	29 51 29 19 27 28 0 91	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
• Cape Chatte	48 31 68 10	29 51 29 19 27 28 0 91	53.1	0.22 17.0	8 30 0	3 20 4	7 44 0	30 0	3 20 4	18 720	13 9	31 3	15 W	2 22 — 0 68 0 63 12 18 1 1 0
• Bécotte	48 31 68 10	29 51 29 19 27 28 0 91	57.3	0.22 17.0	7 44 0	30 0	3 20 4	7 44 0	30 0	3 20 4	13 9	31 3	15 W	2 22 — 0 68 0 63 12 18 1 1 0
• Cape Magdalen	48 31 68 10	29 51 29 19 27 28 0 91	51.1	0.8 18 68 0	13 38 0	17 —	0 8 18 68 0	13 38 0	17 —	0 8 18 68 0	13 38 0	17 —	0 8 18 68 0	13 38 0
• Anticosti W. Pt.	48 31 68 10	29 51 29 19 27 28 0 91	55.9	0.8 17 79 0	14 42 0	20 —	0 8 17 79 0	14 42 0	20 —	0 8 17 79 0	14 42 0	20 —	0 8 17 79 0	14 42 0
• Anticosti S.W. Point	48 31 68 10	29 51 29 19 27 28 0 91	51.4	0.5 17 66 0	20 44 0	3 —	0 5 17 66 0	20 44 0	3 —	0 5 17 66 0	20 44 0	3 —	0 5 17 66 0	20 44 0
• Abitibi	48 31 68 10	29 51 29 19 27 28 0 91	59.3	—	4 40 0	2 15 5	—	4 40 0	2 15 5	—	4 40 0	2 15 5	—	4 40 0
• Anticosti E. Pt.	48 31 68 10	29 51 29 19 27 28 0 91	59.3	—	4 40 0	2 15 5	—	4 40 0	2 15 5	—	4 40 0	2 15 5	—	4 40 0
• Bird Rocks	48 31 68 10	29 51 29 19 27 28 0 91	55.3	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8
• Perce	48 31 68 10	29 51 29 19 27 28 0 91	55.3	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8
• St. Anne des Monts	48 31 68 10	29 51 29 19 27 28 0 91	63.1	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8
(a) St. Anne de la Pointe	48 31 68 10	29 51 29 19 27 28 0 91	63.1	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8	4 15 9	—	21 39 8
NEW BRUNSWICK:														
• Fredericton	45 3 66 26	164 29 59 30 32 29 40 0 92	59.8	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• Chatham	45 3 66 26	164 29 59 30 32 29 40 0 92	60.3	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• Grand Manan	45 3 66 26	164 29 59 30 32 29 40 0 92	57.5	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• Point Lepreau	45 3 66 26	164 29 59 30 32 29 40 0 92	53.8	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• St. John	45 3 66 26	164 29 59 30 32 29 40 0 92	53.8	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• Dalhousie	45 3 66 26	164 29 59 30 32 29 40 0 92	55.9	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• St. Stephen	45 3 66 26	164 29 59 30 32 29 40 0 92	59.4	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• Moncton	45 3 66 26	164 29 59 30 32 29 40 0 92	59.4	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• Sussex	45 3 66 26	164 29 59 30 32 29 40 0 92	59.4	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
• Bathurst	45 3 66 26	164 29 59 30 32 29 40 0 92	58.9	—	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0	4 24 4	57 —	21 38 0
NOVA SCOTIA:														
• Halifax	44 39 63 26	97 29 51 30 29 29 70 0 79	50.3	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Sydney	44 39 63 26	97 29 51 30 29 29 70 0 79	55.8	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Yarmouth	44 39 63 26	97 29 51 30 29 29 70 0 79	56.3	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Port Hastings	44 39 63 26	97 29 51 30 29 29 70 0 79	61.4	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• White Island	44 39 63 26	97 29 51 30 29 29 70 0 79	50.7	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Sable Island	44 39 63 26	97 29 51 30 29 29 70 0 79	50.7	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Gushborough	44 39 63 26	97 29 51 30 29 29 70 0 79	50.7	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Sable Island M. station	44 39 63 26	97 29 51 30 29 29 70 0 79	50.7	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Parrishville	44 39 63 26	97 29 51 30 29 29 70 0 79	50.7	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Wellsville	44 39 63 26	97 29 51 30 29 29 70 0 79	50.7	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
• Bridgetown	44 39 63 26	97 29 51 30 29 29 70 0 79	50.7	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0	4 21 1	—	12 39 0
P. E. ISLAND:														
• Charlottetown	46 11 63 10	38 29 58 30 31 29 44 0 87	59.7	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4
• Summerside	46 11 63 10	38 29 58 30 31 29 44 0 87	59.7	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4
• Hamilton	46 11 63 10	38 29 58 30 31 29 44 0 87	59.7	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4
• Murray River	46 11 63 10	38 29 58 30 31 29 44 0 87	59.7	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4	4 19 3	—	13 35 4
NEWFOUNDLAND:														
• St. John's	47 34 52 42	125 29 50 30 18 29 41 0 77	51.4	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0
• Channell	47 34 52 42	125 29 50 30 18 29 41 0 77	48.8	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0
• Cape Norman	47 34 52 42	125 29 50 30 18 29 41 0 77	43.0	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0
• Amour Point	47 34 52 42	125 29 50 30 18 29 41 0 77	43.0	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0
• Point Rich	47 34 52 42	125 29 50 30 18 29 41 0 77	43.0	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0	12 17 7	—	9 31 0
BERMUDA:														
• Prospect	32 20 54 50	151 30 12 30 35 29 03 0 42	74.1	—	9 83 0	20 61 8	1 10 1	—	9 83 0	20 61 8	1 10 1	—	9 83 0	20 61 8

## OBSERVATIONS AT STATIONS REPORTING RAIN, WEATHER, ETC., DURING JUNE, 1900.

RAINFALL.						REMARKS.
STATIONS.	Amount	No. of	No. of	Heaviest	Date.	
	in inches.	Days 90 or Over.	Days.	Fall in Month.		
m.						
BRITISH COLUMBIA.						
Port Eslington	9.29	19	11	1.65	21	
Nas Harbour	5.83	15	16	1.09	3	
Langley	7.86	16	15	2.35	20	
Nanaimo	3.12	9	21	1.63	19 20	
Vancouver (1)	5.38	11	19	1.20	1	
Goldstream Lake	4.44	17	13	0.98	4	
Royal Oak	2.78	12	18	0.93	20	
Vancouver (2)	5.23	15	14	1.20	20	
N. W. TERRITORIES.						
Rebun	0.82	6	24	0.36	27	
Salcoats	1.40	7	23	0.70	4	
N. E. Beaver Hills	4.38	15	15	1.14	27	
Conits	1.16	5	25	0.71	15	
Strathcona	2.75	14	16	0.34	25	
Imstad	4.18	10	20	1.23	25	
Deidumy	1.24	8	22	1.19	25	
Regina	0.76	8	21	0.29	18	
Stirling	1.10	5	25	0.56	15	
Crescent Lake	1.40	9	21	0.32	26	
MANITOBA.						
Elgin	1.12	10	12	0.35	30	
Rapid City	0.62	3	25	0.40	26	
Noquay	1.49	10	20	0.34	3	
Morden	0.05	2	19	0.03	9	
Belmont	1.18	12	18	0.37	1	
Clear Spring	1.15	6	19	0.31	9	
Portage la Prairie	0.42	5	25	0.13	27	
Oak Lake	0.23	1	27	0.23	26	
Hartney	1.33	5	25	0.72	1	
Deloraine	1.09	11	19	0.48	18	
Beaver Creek	0.21	2	28	0.11	28	
Oakbank	1.05	9	16	0.37	26	
Turtle Mountain	0.64	10	20	0.11	5	
Cartwright	0.81	7	23	0.30	18	
Cartwright (2)	0.71	9	21	0.19	9	
Selkirk	0.90	9	21	0.32	26	
Pembina Crossing	0.64	3	25	0.42	9	
ONTARIO.						
Mostagan	4.98	6	24	3.01	2	
Kitley	5.75	8	22	2.51	2	
Georgetown	3.38	11	17	0.88	1	
Enslede	4.33	10	19	1.20	2	
Cherry Valley	1.48	3	27	1.15	2	
Nottawasaga Island	2.20	6	24	0.80	2	
Providence Bay	1.96	8	22	0.58	2	
Lion's Head	1.00	6	24	0.24	2	
Wooler	2.59	5	25	1.59	2	
Deer Park	2.33	7	23	1.31	2	
Glen Elu	5.15	9	21	2.04	1	
Orangeville	3.68	7	23	1.25	1	
Panotungshene	1.43	12	18	0.53	2	
Uxbridge	2.42	6	24	0.86	1	
Scarboro'	2.44	7	23	1.72	2	
Aurora	2.94	6	24	1.27	13	
Port Barwell	2.91	7	22	1.61	13	
Elgin	4.04	6	24	1.65	1	
Emismore	4.20	6	24	1.30	14	
Ursa	3.35	6	24	1.20	2	
North Williamsburg	3.80	7	23	3.00	2	
Watford	2.74	7	23	0.80	13	
Oliver's Ferry	1.51	4	26	0.49	28	
Wyoming	2.40	7	23	0.58	13	
Jernyn	5.49	6	24	1.45	14	
Midland	1.64	10	20	0.53	1	
Arden	4.70	11	19	1.68	2	
Sunshine	2.72	9	21	1.05	2	
Parma	2.78	3	28	1.16	3	
Wilton Grove	3.68	7	23	1.47	1	
Goderich	3.62	6	24	1.40	2	
Lausdowne	0.64	3	27	0.44	1	
Dealtown	3.04	8	22	1.02	1	
Warton	1.20	6	24	0.36	6	
Lynedoch	2.16	6	24	0.98	1	
Putton	2.31	5	25	0.80	1	
Huntsville	4.03	5	25	1.90	2	
Listowel	3.86	6	24	1.93	1	
NEW BRUNSWICK.						
Point Escominae	1.04	7	23	0.24	14	
NOVA SCOTIA.						
Port Morion	1.34	6	24	0.41	30	
P. E. ISLAND.						
Murray River	2.00	9	21	0.40	14	
Mount Stewart	2.22	5	25	0.72	30	

*Thunders reported on—*

1. W. Beaver Hills, Sussex, Moneton, Parrsboro'.
2. Coldwater, Lindsay, Port Hope, Bancroft, Uplands, Otonabee, Georgetown, Jermyn, Midland, Elgin, Wooler, W. Beaver Hills, Elgin, *Man.* Belmont, Providence Bay, Treherne, Pipestone, Portage la Prairie, Yarmouth, Gravenhurst, Prince Albert, Qu'Appelle, Oonikup, Selkirk.
3. Lindsay, Peterboro', Yarmouth, Deseronto, Stony Mountain, Barnardo, Kingston, Minnedosa.
4. Hillview, Channel Island, Muskowpetung, Estevan, Athabasca Landing, Deloraine.
5. Sunshine, Belmont, Hillview, Treherne, Brandon, Portage la Prairie, Muskowpetung, Estevan, Barnardo, Prince Albert, Winnipeg, Battleford, Athabasca Landing, Pembina Crossing, Selkirk, Turtle Mountain, Oakbank.
6. Erasmus, Wyoming, Norquay, Treherne, Stony Mountain, Port Arthur, Minnedosa.
7. Durham, Guelph, Stratford, London, Coldwater, Lindsay, Meaford, Kilmount, Bancroft, Uplands, Peterboro', Owen Sound, Collingwood, Point Clark, Emsdale, Midland, Wiarton, Dutton, Ursa, Scarboro, Norquay, Whiteside, Birnam, Haliburton, Beatrice, Gravenhurst, Saugeen, Port Stanley, Port Arthur, St. Mary's.
8. Point Clark, Tobacco Plains, N. Nicomen, St. Agathe des Monts, Port Stanley, Ottawa.
9. Norquay, Bathurst, Athabasca Landing, Pembina Crossing.
10. Durham, Meaford, Cockburn Island, Uplands, Owen Sound, Erasmus, Collingwood, Midland, W. Beaver Hills, Red Deer, Birnam, Saugeen, Port Arthur.
11. Rat Portage, Wiarton, Belmont, Treherne, Port Dover, Oonikup.
12. Norquay.
13. Durham, Stratford, London, Coldwater, Lindsay, Agincourt, Port Hope, Lucknow, Hamilton, Brantford, Sarnia, Welland, Peterboro', Erasmus, Otonabee, Collingwood, Georgetown, Wyoming, Midland, Ursa, Scarboro, Aurora, Wooler, W. Beaver Hills, Red Deer, Paris, Birnam, Toronto, Port Stanley, Battleford, St. Mary's.
14. Guelph, Kilmount, Stony Creek, Bancroft, Peterboro', Jermyn, Arden, Sunshine, Regina, Chicoutimi, Muskowpetung, Port Dover, Swift Current.
15. Innisfail, Didsbury, Red Deer, Crane Lake, Knee Hill, Calgary, Nicola Lake, Whiteside, Medicine Hat, Swift Current, Oonikup.
16. Uplands, Clontarf, W. Beaver Hills, Red Deer, Crane Lake, Knee Hill, Calgary, Macleod, Medicine Hat, Athabasca Landing.
17. Port Hope, Arden, Regina, Rouleau, Moose Jaw, Red Deer, Muskowpetung, Knee Hill, Calgary, Port Stanley, Qu'Appelle, Battleford, Athabasca Landing, St. Mary's.
18. Elgin, *Man.*, Belmont, Treherne, Red Deer, N. Nicomen, Barnardo, Swift Current, Oonikup, Pembina Crossing.
19. Rat Portage, Belmont, Norquay, Aweme, Pembina Crossing, Turtle Mountain.
20. Norquay, Dalhousie.
21. Murray River, Summerside, Peregé, Point Lepreaux, Crane Lake, Charlottetown, Father Point, Quebec, Port Arthur, White River, Swift Current.
22. Lindsay, Peterboro', Otonabee, Jermyn, Scarboro, Murray River, Wooler, Red Deer, Griffin Lake, Bathurst, Kingston, Swift Current, Battleford, Oonikup.
23. Truro, W. Beaver Hills, Portage la Prairie, Red Deer, Calgary, Reclamation Works, Griffin Lake, Swift Current, Battleford.
24. W. Beaver Hills, Moose Jaw, Red Deer, Reclamation Works, Griffin Lake, Macleod, Port Arthur.
25. Lansdowne, W. Beaver Hills, Innisfail, Didsbury, Regina, Belmont, Bullion, Providence Bay, Hillview, Pipestone, Knee Hill, Reclamation Works, Enderby, Griffin Lake, Barnardo, Prince Albert.
26. Durham, Stratford, Woodstock, Sturgeon Falls, Agincourt, Lucknow, Bancroft, Uplands, Orillia, Georgetown, Emsdale, Midland, Penetanguishene, Aurora, Rapid City, Elgin, *Man.*, Belmont, Huntsville, Hillview, Treherne, Quebec, Haileybury, Parry Sound, Kingston, White River, Swift Current, Elkhorn, Portage la Prairie, Knee Hill, Haliburton, Birnam, Toronto, Battleford, Aweme, Oakbank.
27. Stratford, Rivers Inlet, London, Lindsay, Truro, Sturgeon Falls, Brantford, Bancroft, Sarnia, Ridgetown, Erasmus, Collingwood, Kitley, Georgetown, Wyoming, Arden, Sunshine, Wilton Grove, Dealtown, Dutton, Oliver's Ferry, Glen Elm, Langley, Point Escuminae, Providence Bay, Summerside, Brome, Chicoutimi, Moneton, Parrsboro', Wolfville, Griffin Lake, Whiteside, Birnam, Grand Manan, St. Agathe des Monts, Haileybury, Port Stanley, Ottawa, St. Mary's.
28. Guelph, Lindsay, Truro, Kilmount, Lucknow, Bancroft, Peterboro', Kitley, Jermyn, Arden, Sunshine, Scarboro, Providence Bay, Richmond, Calgary, French Creek, Griffin Lake, Okanagan Mission, Grand Manan, Yarmouth, Deseronto, Haileybury, Port Stanley, Kingston, St. John.
29. Truro, Bruce Mines, Bancroft, Uplands, Peterboro', Point Clark, Arden, Parma, Wiarton, Scarboro, Lion's Head, Providence Bay, Summerside, Sussex, Parrsboro', Wolfville, Knee Hill, Nicola Lake, Enderby, N. Nicomen, Okanagan Mission, Grand Manan, Gravenhurst, Parry Sound, Kingston, White River, St. John.
30. Truro, W. Beaver Hills, Charlottetown, Grand Manan, Yarmouth, Halifax, Pembina Crossing.

*Aurora recorded—*

Where the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the feeblest in brilliancy.

1. Estevan, IV.
2. Cape Magdalen, Sturgeon Falls, Father Point, IV ; Haileybury, IV.
3. Hillview, III ; Haileybury, IV.
4. Minnedosa, IV.
6. Estevan, IV.
7. Estevan, IV.
14. Brantford, I ; St. Anne de la Pocatière, IV.
18. St. Anne de la Pocatière.
23. Minnedosa, IV.
29. Sturgeon Falls.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE  
SUN WAS ABOVE THE HORIZON IN THE MONTH OF JUNE, 1900.

	HOURS ENDING.															
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria.....	0 09	0 30	0 42	0 49	0 51	0 48	0 52	0 52	0 54	0 55	0 55	0 50	0 48	0 40	0 01	
Kuper Island.....	0 10	0 28	0 35	0 45	0 40	0 43	0 44	0 46	0 50	0 47	0 51	0 52	0 50	0 48	0 14	
Agassiz.....	S	0 20	0 34	0 49	0 50	0 51	0 51	0 53	0 53	0 45	0 44	0 47	0 40	0 30	0 04	
Battleford.....	0 46	0 63	0 64	0 68	0 72	0 68	0 62	0 61	0 59	0 60	0 55	0 53	0 40	0 36	0 28	0 06
Indian Head.....	0 02	0 27	0 41	0 41	0 41	0 42	0 50	0 49	0 50	0 53	0 55	0 54	0 46	0 35	0 08	
Brandon.....	0 50	0 66	0 75	0 79	0 82	0 81	0 82	0 75	0 72	0 64	0 60	0 58	0 60	0 62	0 27	0 02
Winnipeg.....	0 15	0 52	0 63	0 72	0 71	0 73	0 80	0 75	0 71	0 79	0 81	0 79	0 80	0 68	0 53	0 12
Durham.....	0 07	0 25	0 45	0 60	0 64	0 66	0 70	0 73	0 67	0 66	0 63	0 58	0 61	0 53	0 48	0 17
Woodstock.....	0 16	0 46	0 61	0 68	0 77	0 80	0 77	0 82	0 79	0 77	0 80	0 69	0 66	0 50	0 02	
Toronto.....	0 03	0 47	0 72	0 77	0 78	0 86	0 83	0 83	0 85	0 87	0 84	0 83	0 83	0 78	0 58	0 07
Lindsay.....	0 10	0 51	0 58	0 73	0 76	0 81	0 76	0 77	0 77	0 80	0 80	0 82	0 71	0 60	0 53	0 35
Barrie.....	0 03	0 52	0 69	0 70	0 80	0 80	0 86	0 89	0 91	0 84	0 80	0 75	0 75	0 70	0 45	0 00
Kingston.....	0 40	0 74	0 71	0 80	0 76	0 76	0 78	0 73	0 76	0 76	0 75	0 73	0 62	0 46	S	
Ottawa.....	0 19	0 72	0 71	0 75	0 79	0 80	0 79	0 76	0 72	0 73	0 74	0 73	0 64	0 34	0 00	
Montreal.....	0 43	0 61	0 63	0 64	0 68	0 64	0 71	0 78	0 76	0 81	0 81	0 74	0 71	0 38	0 00	
Fredericton.....	0 29	0 55	0 65	0 72	0 72	0 71	0 74	0 70	0 60	0 53	0 58	0 52	0 51	0 39	0 12	
	Victoria.	Kuper Island.	Agassiz.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Durham.	Woodstock.	Toronto.	Lindsay.	Barrie.	Kingston.	Ottawa.	Montreal.	Fredericton.
Mean proportion for month..... (Constant sunshine being 1)	0 40	0 37	0 35	0 52	0 36	0 61	0 63	0 54	0 60	0 70	0 67	0 68	0 63	0 61	0 69	0 54
Difference from average.....	0 02	0 07	0 00	0 02	0 12	0 15	0 09	—	0 08	0 14	0 11	0 18	0 10	—	0 14	0 06
Maximum daily amount.....	0 86	0 86	0 84	0 94	0 83	0 94	0 90	0 99	0 87	0 91	0 98	0 90	0 90	0 88	0 93	0 88
Date.....	11-12	12	11	15	3	24	14	20	30	4	20	19	19	4	—	19
No. of days completely clouded.....	6	7	8	2	5	0	0	6	3	1	0	0	0	2	2	3



## FORECASTS FOR JUNE, 1900.

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 898. These were divided as follows:—

DISTRICT.	No. Issued.	VERIFIED.			
		No. Fully	No. Partly	No. Not	Percentage
MANITOBA.....	87	71	5	11	84.5
LAKE SUPERIOR.....	113	77	23	13	79.2
LOWER LAKE REGION.....	106	89	10	7	89.2
GEORGIAN BAY.....	106	88	8	10	86.8
OTTAWA VALLEY.....	95	85	8	2	92.7
UPPER ST. LAWRENCE.....	95	83	11	1	93.1
LOWER ST. LAWRENCE.....	97	79	4	14	83.5
GULF.....	98	76	8	14	81.6
MAEITIME PROVINCES.....	101	82	11	8	86.6
TOTAL.....	898	730	88	80	86.2

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. E. STUPART,  
*Director.*

Meteorological Office, Toronto,  
26th July, 1900.

## ABSTRACT OF OBSERVATIONS AT DAWSON, YUKON TERRITORY, DURING

MAY, 1900.				JUNE, 1900.			
Day.	TEMPERATURE.		Barometer Pressure at 32°	Day.	TEMPERATURE.		Barometer Pressure at 32°
	Highest.	Lowest.			Highest.	Lowest.	
			in.				in.
1	46.5	22.7	29.30	1	63.2	36.4	28.83
2	57.2	29.2	28.68	2	60.8	39.4	28.61
3	52.4	31.2	28.62	3	65.0	39.2	28.37
4	44.8	33.9	28.52	4	63.6	40.0	28.32
5	45.0	34.7	28.59	5	65.2	39.4	28.33
6	50.2	25.2	28.78	6	69.2	49.7	28.73
7	54.0	32.1	28.78	7	71.3	38.1	28.88
8	55.0	34.3	28.85	8	56.3	47.1	28.94
9	52.0	36.0	28.72	9	67.5	36.6	28.94
10	60.3	31.6	28.66	10	58.8	40.2	28.79
11	62.4	36.7	28.50	11	56.4	38.3	28.97
12	67.3	31.2	28.66	12	74.4	42.8	29.02
13	66.0	32.2	28.45	13	64.6	53.3	28.78
14	67.1	45.1	28.55	14	56.6	47.8	28.74
15	62.5	35.0	28.54	15	66.4	40.6	28.79
16	61.2	40.0	28.50	16	67.0	40.2	28.69
17	58.0	34.8	28.55	17	69.3	43.3	28.70
18	55.3	40.4	28.75	18	75.2	43.9	28.44
19	61.2	34.4	28.77	19	64.0	44.0	28.34
20	62.4	33.8	28.67	20	69.4	49.1	28.12
21	62.3	37.1	28.68	21	65.5	51.6	28.24
22	60.0	36.1	28.73	22	62.4	51.3	28.79
23	59.0	33.8	28.75	23	68.5	48.2	28.90
24	61.5	33.6	28.58	24	74.4	44.2	28.94
25	58.8	40.7	28.46	25	82.0	45.8	28.83
26	59.9	37.4	28.28	26	87.6	52.3	28.82
27	60.4	42.0	28.41	27	84.2	57.2	28.94
28	60.2	40.3	28.57	28	81.0	56.6	28.87
29	56.0	40.4	28.65	29	84.4	54.4	28.86
30	57.3	41.0	28.77	30	83.5	51.2	28.77
31	61.8	36.8	28.88				
	58.0	35.3	28.65		69.3	45.1	28.71
Monthly Mean	46.65			Monthly Mean	57.20		

# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

JULY, 1900.

No. 7

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of July, though departing from the normal in some districts, these departures were nowhere very great, excepting in the rainfall which in some localities was very excessive. Throughout the greater portion of the country the temperature was average or slightly below, the chief exceptions being in Ontario and portions of the Maritime Provinces, where on the contrary, it was average or slightly above. The rainfall was generally above average in Manitoba, Ontario and Quebec, and average or below elsewhere. The proportion of bright sunshine was above average in British Columbia, Manitoba, and the central portion of Ontario, and below elsewhere. The condition of vegetation on the 31st was generally very favourable, adverse reports of any importance coming only from portions of the Territories and Manitoba.

In British Columbia the weather was almost normal, both the temperature and rainfall being about average: the proportion of bright sunshine, however, was quite excessive, more especially during the latter half of the month, when the weather was reported as unusually fine. With the exception of six thunderstorms at Nicola Lake, few were reported. Reports regarding vegetation was generally favourable.

The weather in the North-west Territories did not depart much from the normal, both the temperature and rainfall, with a few local exceptions, being average or slightly below: in most districts, however, there was less bright sunshine than usual, cloudy weather with showers occurring frequently during the first half of the month. During the latter portion of the month when maximum temperatures between 90 and 100 were reported, there was comparatively little rain, and although vegetation was in fair condition generally, it had a somewhat scorched appearance in many places on the 31st.

The exceptionally dry warm weather of June, in Manitoba, was followed by comparatively cool moist weather in July, the mean temperature being generally below average and the rainfall above. There was also rather more bright sunshine than usual, and altogether conditions were exceedingly favourable, vegetation injured in June making good progress and being much benefited.

The chief characteristics of the weather in Ontario were cool nights and warm days during the greater part of the month. The mean temperature was somewhat above average in most places, excepting in districts contiguous to Lake Superior and east of the Georgian Bay, where on the contrary it was slightly below. The rainfall with a few exceptions, was above average. At Toronto and Woodstock the proportion of bright sunshine exceeded the average, elsewhere, however, it was rather deficient. Maximum temperatures exceeding 90 occurred at some places, but they were nowhere exceptional. Thunderstorms were rather frequent and were accompanied in some instances by very high winds, nevertheless little damage was reported, and the condition of vegetation was exceptionally favourable.

In the Province of Quebec, cool nights and warm days with rather an excess of cloud prevailed, whilst the mean temperature was below average and the rainfall above. At some places the total precipitation was nearly double the average amount. Maximum temperatures reported were all below 90, and at Father Point a minimum of 38° was recorded on the 1st. Vegetation, though backward, was in fair condition on the 31st.

The weather in New Brunswick, with a few local exceptions, was cool and dry, the mean temperature being average or slightly below. Cool nights and warm days were very frequent, maximum temperatures at

some places exceeding 90° and minimum temperatures well below 50° being reported. At Bathurst, frost was recorded on the 13th. Few thunderstorms occurred and no damage by high winds was reported. The condition of vegetation on the 31st was fair.

The weather in Nova Scotia did not differ much from the normal, the rainfall alone being distinctly deficient, whilst the mean temperature, which was nearly average, varied with the district. Few fogs occurred, and there were many fine bright days with moderate temperatures and cool nights. A heavy thunderstorm passed over Sydney on the 28th, when the wind reached a velocity of 60 miles an hour. Reports regarding vegetation were generally favourable.

In Prince Edward Island the weather was generally about average, reports from Charlottetown alone showing some difference. At this place the mean temperature was somewhat above average and the rainfall below. At Murray River the temperature reached 90° on the 1st, and at the same place 36° was reported on the 13th, these being the maximum and minimum temperatures of the month for this province. Favourable reports regarding the condition of vegetation were received—F. E. PAYNE.

#### ATMOSPHERIC PRESSURE.

The mean pressure of the month was below average in all portions of Canada, from the Pacific to the Atlantic oceans. The greatest negative departures were between -06 and -08, in British Columbia and elsewhere the departures usually varied between -03 to -05.

#### LOW AREAS.

As many as twelve areas of depression were sufficiently well marked to be tracked, none, however, were particularly energetic. Thunderstorms were numerous in all localities, but irrespective of the squalls which frequently accompanied these storms, few high winds were experienced, except in the North-west Territories.

No. 1 was a shallow depression which formed over the Lake Region during the night of the 2nd, and on the 3rd and 4th passed to the Lower St. Lawrence Valley and the Gulf, accompanied by numerous showers and thunderstorms. No. 2 hovered over Kansas and the neighbouring states for several days, and then passed north-eastward into Manitoba, where it was situated on the morning of the 6th. After passing to the northward of Lake Superior, its course was south-easterly to the St. Lawrence Valley and thence into the Straits of Belle Isle. It was fairly energetic throughout, and it caused numerous showers and thunderstorms in all portions of Canada. No. 3 covered the western and north-western portion of the continent between the 8th and 10th, numerous heavy showers and thunderstorms meanwhile occurring from the Rockies to Manitoba. The depression then moved slowly into the Lake Region and over the St. Lawrence Valley to the Gulf of St. Lawrence, causing local showers and thunderstorms in Ontario, whilst in Quebec and the Maritime Provinces, showery weather prevailed for several days together with some heavy local thunderstorms. No. 4 moved from British Columbia into Alberta between the 10th and 11th, thence south easterly to Kansas where (after the 13th) it lost its identity. It caused some very high winds in many portions of the Territories as well as showers and thunderstorms. No. 5 was an offshoot of No. 4. It was centred in the North Saskatchewan Valley on the 13th and passed slowly to the Ottawa Valley. After the 16th it apparently dispersed. Its accompanying showers and thunderstorms were generally experienced in the Ottawa and St. Lawrence Valleys, some very heavy rainfalls being recorded. Elsewhere in its course the showers and thunderstorms were local. No. 6. The course of this area was very doubtful at first, however, after reaching Nebraska on the morning of the 16th, it took a definite course and travelled between the 17th and 19th over the Lake Region and the St. Lawrence Valley to the Maritime Provinces, its accompanying showers and thunderstorms being general. No. 7 moved into Alberta from British Columbia on the 16th, and after passing over the Territories and Manitoba it dispersed on the 19th over Lake Superior. It was accompanied throughout its course by numerous showers and thunderstorms. No. 8 was a very moderate depression which between the 19th and 21st travelled from the Western States over the Lake Region and down the St. Lawrence Valley to the Gulf, attended by some local showers and thunderstorms more generally recorded in Quebec than elsewhere. No. 9 developed over Alberta on the 19th, and on the 22nd passed out of range of observation to the northward of Lake Superior. It caused some local high winds in the Territories and Manitoba, together with a few scattered showers. No. 10 brought many showers and thunderstorms from the Lower Lake Region to the Maritime Provinces between the 24th and 26th, and then passed into the Gulf of St. Lawrence. No. 11 was situated over British Columbia on the 23rd, it then travelled slowly over Canada and reached the Lower St. Lawrence Valley on the 30th. It was an area of moderate energy, but it caused many showers and local thunderstorms, especially from the Rockies to Manitoba. No. 12 passed over the Territories and Manitoba between the 28th and 30th, then more quickly far north over Canada to the Gulf of St. Lawrence. It caused scattered showers and thunderstorms which were chiefly confined to the North-west Territories and the Province of Quebec.

## HIGH AREAS.

The high pressure areas were few in number and of feeble intensity. The courses of five were fairly well marked, and may be described as follows :—No. 1 was a moderate area which covered the Lake Region between the 1st and 2nd, and then passed south-easterly off the United States Middle Atlantic Coast. It caused decidedly cool night temperatures in many portions of Ontario. No. 2 formed in Manitoba during the night of the 10th, and between the 11th and 15th passed south-easterly to the South Atlantic States. It was an area of feeble energy. No. 3 was situated over Manitoba on the morning of the 16th as a moderate area. By the following morning it had been transferred to Kansas, whence it spread into Ontario, Quebec and the Maritime Provinces, and eventually on the 20th passed off the Nova Scotian Coast. No. 4 was centred over the North Pacific Coast on the 17th, and on the 19th and 20th it travelled into the North-west States, thence it moved over the Lower Lake Region and passed off the New England Coast on the 22nd. No. 5 was an area of very moderate energy which was situated in Manitoba between the 24th and 25th, and thence travelled south-easterly over the Lake Region. It was attended by a period of very fine weather from the lake Region to the Maritime Provinces.

## WINDS.

In all parts of Canada from British Columbia to our Atlantic Coast, the prevailing direction of the winds was largely westerly, and irrespective of local thunder squalls, the winds seldom reached the force of a strong breeze except in the North-west Territories, where on as many as eleven days strong winds were recorded. No storm warnings were issued during the month, and none were required.

## TEMPERATURE.

The mean temperature of the month did not differ very greatly from average in any part of the Dominion : the largest positive departures, amounting to some 2 or 3 degrees, occurred in Southern New Brunswick and Western Nova Scotia, and the largest negative departures, also from 2 to 3 degrees in Eastern Quebec, in Alberta and Western Saskatchewan. A pronounced heat wave passed over the more western and southern portions of Ontario during the 6th and 7th, when temperatures of over 90° were registered, and still greater heat was recorded in Assiniboia between the 23rd and 25th, when 102° was registered at Medicine Hat.

*The Highest and Lowest Temperatures in each Province during July, 1900 were :*

British Columbia,	110°·0 on 30th at Griffin Lake.	38°·4 on 3rd at Rossland.
North-west Territories,	101°·8 on 25th at Medicine Hat.	31°·8 on 4th at Banff.
Manitoba,	91°·0 on 29th at Awenae.	33°·0 on 19th at Barnardo.
Ontario,	98°·4 on 5th at Lucknow.	28°·0 on 1st at White River.
Quebec,	88°·0 on 8th at Richmond.	38°·4 on 1st at Father Point.
New Brunswick,	93°·4 on 16th at St. Stephen.	32°·0 on 13th at Bathurst.
Nova Scotia,	88°·0 on 24th at Pictou.	36°·2 on 3rd at Truro.
Prince Edward Island,	90°·0 on 24th at Murray River.	36°·0 on 13th at Murray River.

## PRECIPITATION.

In nearly all parts of the Province of Quebec and in Eastern and Northern Ontario, the rainfall was nearly double the average for July. On the higher lands of Western Ontario and also in the Niagara Peninsula, it was well up to or in excess of the average, while close along the north shore of Lake Ontario and in the Counties of Grey and Bruce there was a small deficiency. The most marked deficiency, however, occurred in the Maritime Provinces, and especially in the southern portion, where the weather was unusually dry.

In Manitoba and the Territories, the total fall during the month was well up to average. The only note by observers relative to destruction of property by local storms is from Brandon ; a tornado occurred six miles north of that town and injured houses.

## BRIGHT SUNSHINE.

Bright sunshine exceeded the average amount in British Columbia, Manitoba, and over the greater portion of Ontario, but in the North-west Territories the average was not maintained ; Montreal and Fredericton the only stations reporting in Quebec and the Maritime Provinces respectively, were also both below the average.

**PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JULY, 1900.**  
 αBarometer not reduced to Sea Level. • Stations not furnished with Registering Thermometers.

STATION.	PRESSURE.		TEMPERATURE.				Mean amount of cloud.	DIRECTION OF WIND FROM						VELOCITY OF WIND.				PRECIPITATION.			No. of Thunder storms.	No. of Fogs.											
	Mean reduced.	Range.	Mean.	Difference from average.	Highest.	Date.		Lowest.	Date.	Mean daily range.	Mean temperature of day.	Mean relative humidity.	No. of days completely clouded.	N.	N. E.	E.	S. E.	S.	W.	W. N.			C.	Total number of hours.	Mean miles per hour.	Highest velocity, days per hour.	Time and direction from.	Amount.	Difference from Average.	Heaviest fall in month.	No. of Fair days.	No. of days with 10 or more.	
BRITISH COLUMBIA:																																	
Victoria.....	48° 21' 123 10	85	29.98 30.17	29.82 0.35	60.1	0.1	0.72 6	31	50.0	10 14 4	4	1	10	3	6	17	100	303	126	17	102	74	8	0	16.2	8 W	0.40	0.60	0.44	8	0	1	
Barkerville.....	33° 12' 131 35	4180	29.54 30.25	29.50 60	55.4	0.5	12.8 0	34	35.0	2 24 7	1	0	2	1	0	0	8	9	9	5	15	62	15.0	31 S	1.21	0.55	1.11	15	1	0	0	0	
Alexsria.....	49° 14' 121 31	32	29.97 30.30	29.72 0.58	65.5	0.3	3.0 0.00	22	45.0	9 25 6	1	0	0	0	0	0	78	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Abbotsford.....	49° 12' 121 30	170	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Port Simpson.....	50° 13' 121 30	770	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Spence's Bridge.....	50° 13' 121 30	770	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Revelstoke.....	51° 0' 118 6	1176	29.85 30.07	29.58 0.49	62.0	0.1	8.84 0	39	42.0	10 27 7	5	3	4	2	4	2	5	4	9	1	31	72	7	0	15	15 W	4.37	0.55	0.51	15	0	0	
Kamloops.....	50° 41' 120 29	1193	29.85 30.07	29.58 0.49	62.0	0.1	8.84 0	39	42.0	10 27 7	5	3	4	2	4	2	5	4	9	1	31	72	7	0	15	15 W	4.37	0.55	0.51	15	0	0	
Princeton.....	49° 29' 120 29	1193	29.85 30.07	29.58 0.49	62.0	0.1	8.84 0	39	42.0	10 27 7	5	3	4	2	4	2	5	4	9	1	31	72	7	0	15	15 W	4.37	0.55	0.51	15	0	0	
Pilot Bay.....	49° 35' 116 55	20	30.02 30.33	29.71 0.62	63.8	0.3	8.80 0	34	49.0	1 20 8	54	9	6	1	0	0	4	0	3	55	60	135	1	14	15 W	4.37	0.55	0.51	15	0	0		
Rivers Inlet.....	51° 0' 118 6	1176	29.85 30.07	29.58 0.49	62.0	0.1	8.84 0	39	42.0	10 27 7	5	3	4	2	4	2	5	4	9	1	31	72	7	0	15	15 W	4.37	0.55	0.51	15	0	0	
Stuart's Lake.....	54° 24' 121 12	1800	30.02 30.33	29.71 0.62	63.8	0.3	8.80 0	34	49.0	1 20 8	54	9	6	1	0	0	4	0	3	55	60	135	1	14	15 W	4.37	0.55	0.51	15	0	0		
French Creek.....	49° 29' 121 36	4675	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Glacier.....	51° 16' 117 28	4675	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Donald.....	51° 56' 118 20	1900	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Griffin Lake.....	50° 56' 118 20	1517	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Vernon.....	50° 14' 119 15	1256	30.00 30.29	29.81 0.39	66.1	0.1	5.57 8	15	46.5	10 24 6	73	4	1	8	21	2	2	6	2	2	4	13	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Killer Island.....	48° 08' 119 35	30	30.00 30.29	29.81 0.39	66.1	0.1	5.57 8	15	46.5	10 24 6	73	4	1	8	21	2	2	6	2	2	4	13	1	10	31 S	6.71	0.55	0.51	15	0	0		
Chulswick.....	49° 10' 121 31	32	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Quatsino.....	49° 32' 118 47	1800	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Midway.....	49° 0' 118 46	1800	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Emery.....	50° 22' 119 7	1180	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Nicola Lake.....	50° 29' 120 39	2120	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Chilcotin.....	52° 12' 122 40	2170	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
West Kootenay.....	49° 29' 117 50	2300	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Garry Point.....	49° 21' 123 17	2300	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Tobacco Plains.....	49° 18' 125 4	195	29.97 30.30	29.72 0.58	57.8	1.7	14.7 5	22	46.5	10 12 6	89	8	1	1	0	0	1	17	6	9	0	56	30	1	14	16 SW	2.72	0.55	0.51	15	0	0	
Vancouver.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
New Westminster.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20 0.94	60.9	0.9	1.76 0	31	46.0	10 15 1	138	6	1	0	27	15	16	9	20	0	5	93	1	10	31 S	6.71	0.55	0.51	15	0	0		
°Locher.....	49° 13' 122 54	330	29.93 30.14	29.20																													

N.-W. TERRITORIES—*Con.*

N. W. TERRITORIES—Con.									
	°	'	in.	in.	in.	°	'	in.	in.
Chaplin.....	50	57	106	40	2202	65	1	—	17 52 0
Moose Jaw.....	50	21	105	85	1745	63	6	—	6 06 0
Regina.....	50	17	104	55	1885	63	6	—	6 06 0
Indian Head.....	50	15	103	40	1924	64	3	—	1 6 16 93 0
Cunningham Manor.....	49	43	102	2	—	64	3	—	0 10 97 0
Nucleon.....	49	44	113	24	4950	63	5	—	94 0
Yarrow.....	49	45	117	42	4950	65	2	—	3 10 0
Gatesgarth.....	49	31	105	0	3750	60	6	—	—
Pincher Creek.....	49	11	104	0	3750	60	6	—	—
Gravel.....	50	23	102	53	1957	60	1	—	4 87 5
Kneehill.....	51	55	113	0	—	63	4	—	3 07 5
Muskowpetung.....	50	15	104	15	—	63	4	—	—
Fort Simpson.....	50	12	121	43	—	58	3	—	—
Alameda.....	49	15	121	17	—	58	3	—	—
Deer Lake.....	52	54	105	9	—	62	9	—	—
Red Deer.....	52	15	113	31	—	62	9	—	—
Montalto Creek.....	50	22	113	46	—	56	2	—	—
Saskatoon.....	52	15	106	30	—	62	9	—	—
Crane Lake.....	51	17	105	50	—	62	9	—	—
Lagash (Yukon).....	60	17	154	15	—	61	9	—	—
Albion Landing.....	59	0	101	57	—	66	6	—	—
Moosomin.....	59	0	101	57	—	66	6	—	—
Estevan.....	49	12	103	4	—	66	6	—	—
MONTANA:									
Minnetonka.....	50	10	99	48	1890	63	4	—	0 7 15 85 2
Winnipeg.....	49	53	97	7	760	64	9	—	1 12 56 2
ast Alban's (Aweine).....	49	53	97	33	—	65	3	—	1 12 56 2
Portage la Prairie.....	49	53	97	11	829	64	5	—	1 12 56 2
Brandon.....	49	57	97	33	1176	64	5	—	1 12 56 2
Channel Island.....	52	15	105	23	710	64	6	—	1 12 56 2
Ekron.....	49	5	101	16	963	63	5	—	1 12 56 2
Stony Mountain.....	50	5	101	16	963	63	5	—	1 12 56 2
abartado.....	50	50	101	20	—	62	0	—	—
Frederic.....	49	38	98	42	—	62	0	—	—
Rosbank.....	49	37	98	5	—	62	0	—	—
Billyview.....	49	14	100	35	1400	65	—	—	—
Roseberry.....	49	14	100	35	1400	65	—	—	—
Preston.....	49	14	100	35	1400	65	—	—	—

### ONSTARIO:

[illegible]







## OBSERVATIONS AT STATIONS REPORTING RAIN, WEATHER, ETC., DURING JULY, 1900.

STATIONS.	RAINFALL.				THUNDER OR LIGHTNING.	
	Amount in inches.	No. of Days, 30 or Over.	No. of Fair Days.	Heaviest Fall in Month.	Date.	
BRITISH COLUMBIA—	in.			in.		
Port Eslington	1.01	15	16	0.76	20	
Nanaimo Harbour	2.68	13	18	0.48	27	
Nanaimo	0.80	4	27	0.46	4	
Vancouver	1.39	5	26	0.45	11	
Royal Oak	0.62	6	25	0.20	11	
Goldstream Lake	1.27	6	25	0.39	11	
N. W. TERRITORIES—						
Brandon	2.84	4	27	1.73	5	
Didsbury	1.60	11	20	0.28	12	
Beaver Hills	2.09	15	16	0.57	9	
Conits	0.72	5	26	0.30	6	
Strathcona	4.07	22	8	0.67	17	
Clearspring	1.89	8	22	2.32	1	
Crescent Lake	1.22	7	24	0.55	17	
Salcoats	2.15	3	23	1.30	5	
Stirling	2.34	6	25	1.13	7	
Regina	2.04	8	23	1.26	4	
Imperial	3.88	11	20	0.65	28	
MANITOBA—						
Portage la Prairie	3.75	8	23	1.87	6	
Cartwright	4.26	7	24	2.96	4, 5	
Neepawa	5.01	7	24	2.83	6	
Elgin	3.79	12	15	2.40	5, 6	
Selkirk	3.64	8	23	0.89	9	
Deloraine	4.28	9	22	3.10	5, 6	
Pembina Crossing	2.23	7	23	1.26	5, 6	
Turtle Mountain	3.22	9	22	2.18	5	
Oak Lake	2.23	4	27	0.79	6	
Hartney	3.93	10	21	1.85	6	
Belmont	3.00	10	21	1.82	5	
Morden	2.38	5	26	1.33	5	
Oakbank	4.30	8	22	1.54	7	
Cartwright (2)	3.83	13	18	1.39	5	
Beaver Creek	4.08	5	26	2.45	5	
Rapid City	3.43	7	24	1.08	5	
ONTARIO—						
Elgin	4.23	9	22	1.36	16	
Emmetsburg	4.67	9	20	1.20	16	
Wyoming	4.45	9	20	1.33	29	
Cherry Valley	1.79	5	25	0.55	16	
Westminster	4.05	11	20	1.02	29	
Scarboro'	3.04	10	21	0.85	15	
Lynedoch	1.69	5	26	1.26	25	
Port Burwell	4.82	10	21	1.55	24, 25	
Jermyn	3.51	6	25	1.37	17	
Deer Park	3.35	12	19	1.31	4	
Moistagne	4.88	11	20	1.24	16	
Glen Elm	4.28	11	20	1.10	16	
Dealtown	5.38	9	22	1.32	17	
Uxbridge	4.44	11	20	1.66	14	
Arden	4.33	13	18	0.85	17	
Dutton	3.39	6	24	1.18	17	
Orangeville	6.29	13	18	2.59	11	
Watford	2.83	9	22	0.68	29	
North Williamsburg	5.80	10	21	1.90	16	
Lansdowne	1.99	8	23	0.46	17	
Emsdale	3.20	17	14	0.66	16	
Midland	3.48	11	20	0.85	14	
Kitley	3.97	10	21	0.65	25	
Wooler	3.08	11	20	0.71	15	
Listowel	3.85	8	23	1.07	17	
Parma	3.06	11	20	0.88	25	
Go Lench	3.00	7	24	0.70	21	
Georgetown	3.29	12	18	0.82	4	
Oliver's Ferry	3.44	11	20	0.75	24	
Sunshine	1.89	9	22	0.57	17	
Aurora	3.86	9	22	1.20	29	
Ursa	6.65	16	15	1.23	11	
Huntsville	4.55	9	22	2.53	5	
Providence Bay	5.28	10	20	2.30	15	
Lion's Head	1.80	6	25	0.65	3	
Nottawasaga Island	3.20	5	25	1.20	13	
Pen-tangushine	4.31	11	18	1.69	16	
NEW BRUNSWICK—						
Point Esquimaux	2.94	9	21	0.83	10	
NOVA SCOTIA—						
Port Morden	2.45	8	23	0.64	19	

*Aurora recorded —*

Where the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the faintest, & brilliancy.

2. St. Anne de la Pocatière.
18. Pembina Crossing, III; Aweme, III; Haileybury.
19. Gravenhurst, IV; Aweme, IV.
21. Aweme, IV.
22. Stony Creek, IV.
23. Pembina Crossing, IV; Portage la Prairie, Aweme, III.
24. Barnardo, II; Gravenhurst, IV; Hillview, III; Pembina Crossing, III; Portage la Prairie, Aweme, II; St. Anne de la Pocatière, Oonikup.
25. Chicoutimi, Regina.
28. Moose Jaw.
31. Gravenhurst, IV; Sturgeon Falls, Haileybury.

*Thunder reported on —*

1. Barnardo, Rat Portage, Pipestone, Hillview, Nicola Lake, Estevan, Calgary, Clearspring, Norquay, Hillview, Minnedosa, Belmont.
2. Uplands, Brandon, Prince Albert, Norquay, Port Arthur.
3. Haliburton, Birnam, Parry Sound, Nicola Lake, Crane Lake, Dealtown, Emsdale, Wooler, Ursa, Lion's Head, Banff.
4. Durham, Stratford, London, Point Clark, Dunnville, Agincourt, Collingwood, Lucknow, Port Dover, Brantford, Birnam, Alton, Stony Creek, Stouffville, Welland, Prince Albert, Battleford, Wyoming, Scarborough, Deer Park, Dutton, Georgetown, Pembina Crossing, Regina, Stratheona, Toronto, Guelph.
5. Macleod, Stony Mountain, Barnardo, Durham, Lindsay, Stratford, Coldwater, Gravenhurst, Point Clark, Meaford, Dunnville, Agincourt, Hamilton, Port Hope, Bala, Haliburton, Paris, Alton, Stony Creek, Bancroft, Owen Sound, Stouffville, Otonabee, Hillview, Battleford, Port Stanley, Red Deer, Calgary, Crane Lake, Muskowpetung, Norquay, Hillview, Emsdale, Midland, Georgetown, Aurora, Huntsville, Pembina Crossing, Regina, Stratheona, Toronto, Belmont.
6. Deseronto, Point Clark, Kinnmount, Port Hope, Cockburn Island, Lucknow, Alton, Bancroft, Clontarf, Erasmus, Peterborough, Otonabee, Parry Sound, Estevan, Norquay, Scarborough, Arden, Lansdowne, Stratheona, Toronto, Haileybury.
7. Durham, London, Coldwater, St. Agathe, Brome, Point Clark, Dunnville, Port Hope, Paris, Bancroft, Clontarf, Stouffville, Erasmus, Ridgeway, Otonabee, Port Stanley, Quebec, Wyoming, Dealtown, Dutton, Emsdale, Midland, St. Anne de la Pocatière.
8. Macleod, Deseronto, Coldwater, St. Agathe, Pictou, Summerside, Moncton, Brome, Kinnmount, Port Hope, Bala, Bancroft, Otonabee, Truro, Port Stanley, Medicine Hat, Nicola Lake, Knechtill, Red Deer, Calgary, Crane Lake, Arden, Kitley, Sunshine, Stratheona, Montreal, Toronto, St. Anne de la Pocatière, Haileybury.
9. Barnardo, Summerside, Port Hope, Brandon, Treherne, Portage la Prairie, Battleford, Medicine Hat, Swift Current, Red Deer, Muskowpetung, Clearspring, Norquay, Hillview, Selkirk, Scarborough, Pembina Crossing, Belmont.
10. Coldwater, Paris, Otonabee, Treherne, Norquay, Point Escuminac.
11. Durham, Lindsay, Stratford, London, Gravenhurst, St. Agathe, Brome, Point Clark, Sturgeon Falls, Meaford, Dunnville, Kinnmount, Agincourt, Port Hope, Collingwood, Bala, Haliburton, Brantford, Paris, Birnam, Alton, Beatrice, Stony Creek, Bancroft, Clontarf, Stouffville, Erasmus, Lakeside, Peterborough, Uplands, Otonabee, Port Stanley, Quebec, Bullion, Vancouver, Crane Lake, Elgin (Ont.), Wyoming, Westminster, Scarborough, Montague, Glen Elm, Uxbridge, Arden, Emsdale, Midland, Kitley, Wooler, Georgetown, Aurora, Vancouver, Montreal, Toronto, Guelph, Haileybury.
12. Bathurst, Summerside, Stouffville, Prince Albert, Battleford, Swift Current, Grifin Lake, Muskowpetung, Arden, Banff, Qu'Appelle, Halifax, Oonikup, Fredericton, Turtle Mountain.
13. Stony Mountain, Summerside, Rat Portage, Stouffville, Brandon, Treherne, Battleford, Quebec, Clearspring, Ennismore, Hillview, Qu'Appelle, Minnedosa, Bermuda, Belmont.
14. Durham, Stratford, Coldwater, Port Hastings, Point Clark, Meaford, Bruce Mines, Agincourt, Cockburn Island, Collingwood, Lucknow, Owen Sound, Stouffville, Erasmus, Lakeside, Truro, White River, Saugeen, Nicola Lake, Red Deer, Norquay, Uxbridge, Midland, Providence Bay, Lion's Head, Port Arthur, Bermuda.
15. Deseronto, Lindsay, Stratford, London, Coldwater, Gravenhurst, Point Clark, Dunnville, Agincourt, Port Hope, Cockburn Island, Collingwood, Bala, Brantford, Birnam, Alton, Beatrice, Bancroft, Peterborough, Welland, Otonabee, Parry Sound, Port Stanley, Bullion, Wyoming, Westminster, Scarborough, Jernyn, Lansdowne, Wooler, Georgetown, Sunshine, Providence Bay, Toronto, Guelph.

16. Durham, Deseronto, Stratford, London, Brome, Point Clark, Sturgeon Falls, Meaford, Agincourt, Port Hope, Bala, Lucknow, St. Mary's, Alton, Bancroft, Banff, Clontarf, Peterborough, Uplands, Otonabee, Pipestone, Elkhorn, Nicola Lake, Red Deer, Calgary, Wyoming, Scarboro, Emsdale, Midland, Wooler, Georgetown, Regina, Strathcona, Toronto, Qu'Appelle, Guelph, Grand Manan.

17. Barnardo, Deseronto, Lindsay, Point Clark, Meaford, Agincourt, Port Hope, Sarnia, Haliburton, Brantford, Paris, Birnam, Alton, Bancroft, Clontarf, Erasmus, Peterborough, Welland, Ridgetown, Otonabee, Pipestone, Portage la Prairie, Dutton, Elkhorn, Port Stanley, Calgary, Muskowpetung, Norquay, Wyoming, Jermyn, Georgetown, Sunshine, Regina, Strathcona, Rouleau, Crescent Lake, Qu'Appelle, Minnedosa, Oonikup, St. John, Belmont.

18. Lakefield, Calgary, Clearspring, Elgin (Ont.), Elgin (Man.), Arden, Yarmouth.

19. Dunnville, Port Arthur.

20. Birnam, Erasmus, Sarnia, Ridgetown, Red Deer, Crane Lake, Elgin (Man.), Wyoming, Bermuda.

21. Cape Chatte, Port Stanley, Sunshine, Pembina Crossing.

22. Bermuda, Haileybury.

23. Port Dover, Owen Sound, Quebec, Midland, Strathcona, St. Anne de la Pocatière.

24. Kuper Island, Durham, Lindsay, Stratford, Coldwater, Gravenhurst, St. Agathe, Summerside, Meaford, Dunnville, Kinnmount, Agincourt, Hamilton, Haliburton, Lucknow, Brantford, Paris, St. Mary's, Alton, Beatrice, Bancroft, Clontarf, Erasmus, Lakefield, Peterborough, Welland, Ridgetown, Uplands, Otonabee, Parry Sound, Saugeen, Swift Current, Quebec, Griffin Lake, Wyoming, Scarboro, Jermyn, Dutton, Emsdale, Kitley, Wooler, Georgetown, Point Escummiac, Strathcona, Montreal, Toronto, St. Anne de la Pocatière.

25. Macleod, Deseronto, Perce, Point Clark, Lakefield, Calgary, Medicine Hat, Kneehill, Red Deer, Calgary, Arden, Sunshine, Strathcona, Montreal, Banff, St. Anne de la Pocatière, St. John.

26. Macleod, St. Stephen, Point Clark, Bancroft, Calgary, Red Deer, Crane Lake, Strathcona.

27. Swift Current, Estevan, Clearspring, Arden, Pembina Crossing, Minnedosa, Turtle Mountain, Belmont.

28. Picton, Dutton, Strathcona, Port Arthur.

29. Barnardo, Durham, Lindsay, Stratford, Chicoutimi, Dunnville, Kinnmount, Agincourt, Port Hope, Bala, Lucknow, Brantford, Paris, St. Mary's, Birnam, Alton, Beatrice, Bancroft, Clontarf, Owen Sound, Stouffville, Welland, Ridgetown, Nottawasaga, Port Stanley, Jermyn, Midland, Kitley, Wooler, Georgetown, Montreal, Toronto, Bermuda, Haileybury, Oonikup.

30. Stony Mountain, Deseronto, Coldwater, St. Agathe, Cape Chatte, Brome, Bruce Mines, Otonabee, Quebec, Elgin (Ont.), Arden, Kitley, Sunshine, Strathcona.

31. Stratford, St. Agathe, Chicoutimi, Port Dover, Erasmus, Ottawa, Port Stanley, Quebec, Nicola Lake, Emsdale, Banff, Haileybury.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE  
SUN WAS ABOVE THE HORIZON IN THE MONTH OF JULY, 1900.

	HOURS ENDING															
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria	0.00	0.20	0.62	0.73	0.74	0.75	0.71	0.74	0.83	0.77	0.84	0.82	0.75	0.60	0.48	0.00
Kuper Island	0.00	0.16	0.64	0.68	0.76	0.76	0.77	0.72	0.82	0.77	0.75	0.74	0.74	0.67	0.62	0.10
Agassiz	0.00	0.01	0.45	0.50	0.52	0.55	0.61	0.69	0.73	0.67	0.69	0.67	0.66	0.57	0.36	0.00
Battleford	0.38	0.54	0.59	0.69	0.69	0.64	0.61	0.63	0.61	0.63	0.61	0.55	0.52	0.47	0.30	0.00
Indian Head	0.00	0.00	0.21	0.52	0.57	0.67	0.71	0.74	0.72	0.70	0.72	0.57	0.55	0.49	0.26	0.00
Brandon	0.23	0.49	0.52	0.64	0.74	0.75	0.77	0.75	0.74	0.71	0.77	0.75	0.69	0.66	0.28	0.03
Winnipeg	0.16	0.59	0.62	0.60	0.64	0.65	0.62	0.64	0.69	0.72	0.73	0.72	0.75	0.71	0.62	0.60
Durham	0.02	0.43	0.32	0.54	0.60	0.68	0.73	0.70	0.72	0.64	0.65	0.60	0.64	0.57	0.50	0.20
Woodstock	0.00	0.48	0.61	0.65	0.75	0.76	0.78	0.71	0.71	0.68	0.70	0.58	0.66	0.64	0.53	0.08
Toronto	0.10	0.25	0.70	0.79	0.78	0.72	0.82	0.81	0.84	0.84	0.81	0.79	0.79	0.78	0.55	0.04
Lindsay	0.02	0.26	0.38	0.53	0.58	0.65	0.65	0.68	0.64	0.71	0.66	0.65	0.58	0.47	0.41	0.25
Barrie	0.38	0.32	0.57	0.55	0.61	0.67	0.65	0.73	0.69	0.75	0.73	0.68	0.68	0.64	0.61	0.00
Kingston	0.00	0.13	0.44	0.52	0.60	0.68	0.73	0.71	0.74	0.73	0.76	0.70	0.56	0.46	0.21	0.00
Ottawa	0.00	0.18	0.40	0.38	0.47	0.53	0.56	0.61	0.57	0.71	0.73	0.73	0.59	0.52	0.24	0.00
Montreal	0.00	0.19	0.37	0.42	0.44	0.50	0.53	0.55	0.64	0.63	0.60	0.66	0.69	0.54	0.17	0.00
Fredericton	0.29	0.43	0.48	0.54	0.62	0.68	0.66	0.70	0.65	0.61	0.57	0.45	0.44	0.36	0.09	0.00
	Victoria	Kuper Island	Agassiz	Battleford	Indian Head	Brandon	Winnipeg	Durham	Woodstock	Toronto	Lindsay	Barrie	Kingston	Ottawa	Montreal	Fredericton
Mean proportion for month (Constant sunshine being 1)	0.62	0.62	0.49	0.54	0.47	0.60	0.60	0.55	0.59	0.68	0.53	0.56	0.53	0.48	0.52	0.50
Difference from average	0.09	0.10	0.03	0.03	0.11	0.04	0.02		0.02	0.08	0.04	0.01	0.04		0.07	0.01
Maximum daily amount	0.88	0.90	0.84	0.94	0.80	0.90	0.95	0.93	0.92	0.91	0.98	0.96	0.88	0.90	0.99	0.90
Date	29	20	19	31	30	30	22	23	28	30	1	26	23	27	19	27
No. of days completely clouded	0	1	2	1	3	3	4	3	0	0	1	2	0	2	2	4

## FORECASTS FOR JULY, 1900.

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 915. These were divided as follows :—

DISTRICT.	VERIFIED.				Percentage
	No. Issued.	No. Fully	No. Partly	No. Not	
MANITOBA .....	87	66	6	15	79.3
LAKE SUPERIOR .....	107	83	13	11	83.6
LOWER LAKE REGION .....	114	101	6	7	91.2
GEORGIAN BAY.....	111	96	5	10	88.7
OTTAWA VALLEY.....	100	84	3	13	85.5
UPPER ST. LAWRENCE .....	100	81	9	10	85.5
LOWER ST. LAWRENCE.....	97	75	8	14	81.4
GULF .....	92	71	10	11	82.6
MARITIME PROVINCES .....	107	83	11	13	82.7
TOTAL .....	915	749	56	59	83.9

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. E. STUPART,  
*Director.*

Meteorological Office, Toronto,  
26th August, 1900.

# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

AUGUST, 1900.

No. 8

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of August was characterized by low mean temperatures west of Manitoba to the Pacific, and exceptionally high mean temperatures east of the Territories to Quebec, the departures being unimportant elsewhere. The rainfall was generally above average from the Pacific Coast to the western boundary of Ontario, and below, with a few exceptions, from the eastern boundary of Manitoba to the Atlantic. The proportion of bright sunshine was generally below average over the western half of the country, and above over the eastern half. Exceptional and persistently high temperatures occurred in many districts, more especially in Ontario, where in some places it exceeded 90° on six consecutive days. Snowfalls were reported from several places in the western portion of the country.

The weather throughout the greater portion of British Columbia was exceptionally cool and cloudy, and in many places unusually wet; frosts occurred at several places, vegetation, however, was in average condition and harvesting progressed favourably.

In the North-west Territories, the weather conditions were very similar to the conditions in British Columbia, low temperatures, much rain and clouded skies prevailing. Frosts occurred at some places towards the end of the month, and snow fell at several places on the 25th and 26th, 1.0 inches being reported from Calgary, 0.8 inch from Banff, and 1.0 inch from Edmonton. Vegetation, and more especially the grain crop, was much injured in some districts by this exceptionally severe weather. Frequent thunderstorms with high winds caused some loss of life and also much damage to property, houses being unroofed and wrecked in several instances.

In Manitoba the weather, unlike that in the Territories, was warm, but the rainfall was exceptionally heavy, some stations reporting more than 5 inches in excess of average. Clouded skies also prevailed, and thunderstorms with high winds occurred frequently. Very high temperatures in the first week, followed by cool weather and frosts at some places in the last week, were reported; and the condition of vegetation and more especially grain crops, was not favourable.

The weather conditions in Ontario were very much more favourable than in the provinces already referred to, though some districts suffered from drouth. Throughout the province the temperature was considerably above average whilst the rainfall, with few exceptions, was considerably below; the deficiency, however, in most districts was not great, and at a few places the rainfall was average. During the greater part of the month there was much bright sunshine, but the most noticeable feature was the high temperatures recorded during the first half of the month, between 90° and 100° being reported upon five or six consecutive days at many places, these occurring more especially from the 5th to the 11th. No frosts were reported, and with the exception of some damage in Muskoka and Parry Sound districts by drouth, the condition of vegetation was favourable.

In the Province of Quebec, the weather was generally fine warm and dry, the temperature in most places being somewhat above average and the rainfall below. The maximum temperatures reported only reached 90° at one station, namely St. Anne, and the lowest temperature reported was 38° at Brome on the 11th. With the exception of six thunderstorms at Quebec, very few were reported.

The weather in New Brunswick was much the same as in Quebec, the temperature being above average and the rainfall below in most districts. Throughout the month there was much bright sunshine and altogether the weather was exceptionally fine. The highest temperatures occurred at most places on the 26th and 27th, when between 90 and 93 was recorded at some stations, these high temperatures being quite exceptional. An unusually heavy thunderstorm occurred in the county of Kent on the 26th, when some property was damaged. Owing to the drouth vegetation was only in fair condition.

In Nova Scotia the weather conditions varied with the district, but with few exceptions the departures from average were quite unimportant. Frequent calms with much bright sunshine prevailed. At most places the maximum temperatures did not reach 85, but at Halifax 91.5 was recorded on the 27th. The condition of vegetation was generally favourable.

The weather in Prince Edward Island did not differ much from the normal, but at most places it was somewhat warmer and drier than usual. Heavy thunderstorms with high winds occurred on the 26th, doing some damage to grain crops, but with this exception the winds were generally light. Reports regarding the condition of vegetation were generally favourable. —F. F. PAYNE.

### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was below average from British Columbia to Lake Superior and above average elsewhere in the Dominion. The departures were however nowhere very large. The Upper Ottawa Valley gave the largest positive amount .08 of an inch and the Qu'Appelle Valley the largest negative amount .09 of an inch.

### HIGH AREAS.

There was a considerable amount of high pressure from Ontario to the Maritime Provinces but very little elsewhere in Canada. Six areas were traced, the majority travelling from the far Northward into the Ottawa and St. Lawrence Valleys.

No. 1 covered the Lake Region and Central States on the morning of the 1st. During the 1st and 2nd an offshoot passed southward over Lake Erie, while the main area travelled slowly to the Ottawa Valley where it was centered on the morning of the 4th, and afterwards also moved southward to the States bordering on the United States Atlantic Coast. During its presence in Canada the weather was very fine from Ontario to the Maritime Provinces. No. 2 was a moderate area which between the 6th and 7th travelled from the Hudson's Bay Region south-eastward over the Gulf of St. Lawrence attended for a time by strong north-easterly winds in the Lower St. Lawrence Valley. No. 3 travelled from the far North and reached the Ottawa Valley on the morning of the 12th. It then passed over Quebec and New Brunswick to the Gulf of St. Lawrence. Very cool nights were experienced in the path of this area. On the Upper Ottawa on the night of the 12th the temperature fell to 36°. No. 4 was of feeble energy, it appeared in the far North on the 15th, and gradually spread over the country from Ontario to the Maritime Provinces. No. 5 was another area of feeble energy. It developed during the night of the 19th in the North-west Territories and after reaching the Ottawa Valley on the 23rd it dispersed. No. 6 was perhaps the most marked area of the month. On the morning of the 26th it was centered in British Columbia whence it moved slowly over the Dominion and reached the Maritime Provinces on the 1st of September. It was accompanied by very fine weather throughout its course.

### LOW AREAS.

In the North-west Territories, British Columbia and Manitoba the pressure was generally low during the month but the depressions responsible for the existing conditions were as a rule so erratic in their movements that it was impossible that they could be accurately traced. Many in fact would form in parts of the North-west and disperse again in almost the same locality. The following is a brief description of the four depressions chartered.

No. 1 was centered in the Lower St. Lawrence Valley on the morning of the 11th as a fairly energetic area. It seemingly had travelled southward from the Hudson's Bay Region. During the 11th it moved rapidly south-eastward and at night passed off the Cape Breton Coast. It was attended by numerous showers and thunderstorms from the Lake Region to the Maritime Provinces as well as by some local high winds, the latter being chiefly confined to the Lower St. Lawrence Valley and the Gulf. Prior to the 11th a fair amount of comparatively low pressure had prevailed especially in Manitoba and the Territories but no depression was particularly well defined. During the period from the 1st to the 11th showers and thunderstorms were also very numerous in the Territories and Manitoba where in many localities heavy rainfalls were recorded. No. 2 was a very shallow depression which was situated on the morning of the 12th over the southern portion of Lake Michigan. During the 12th it passed over Lake Erie and thence off the United States Atlantic Coast.



It caused showers fairly generally from Ontario to the Maritime Provinces, the heaviest rains occurring in the Bay of Fundy region and South-western Nova Scotia. No. 3 travelled from Kansas to the Lake Superior region as a well defined area and then lost its identity. It caused some heavy local thunderstorms as far east as the Georgian Bay district and the Ottawa Valley. The period intervening between Nos. 2 and 3 was marked by a large amount of low pressure in the Territories and Manitoba but the general course of depression was too ill defined to trace. There was also a good deal of showery weather attending the low pressure but the showers were more numerous in the Territories than elsewhere. No. 4 traveled from Northern British Columbia to the Qu'Appelle Valley between the 24th and 25th and then its identity was lost. It was remarkable for being accompanied by a heavy fall of snow in many portions of Alberta and the Cariboo country, a most unusual occurrence at such an early date in the season. After the 26th and until the close of the month there was a continuance in the Territories and Manitoba of low pressure together with numerous and heavy local rainfalls.

### WINDS.

In British Columbia and the North-west Territories the direction of the wind was largely variable with a tendency in favour of the westerly. The mileage, however, was considerable. In British Columbia fresh to strong breezes prevailed on eighteen days, and in the Territories on twenty-five days, the force of a gale being reached in the latter district on three occasions.

In Manitoba the direction was variable; a strong wind was seldom recorded, but fresh breezes were frequent. In the Lake Region and the Ottawa and St. Lawrence Valleys the direction was also variable, and the force for the most part light to moderate: practically no strong winds were recorded, and the force of a fresh breeze was seldom attained. In the Gulf of St. Lawrence and in the Maritime Provinces the westerly direction predominated. In the Gulf the force of a strong breeze was only reached on five days, and in the Maritime Provinces no winds exceeding a fresh breeze prevailed. No warnings were issued and none were required.

### BRIGHT SUNSHINE.

The proportion of bright sunshine was below the average from Vancouver Island to Manitoba, and above the average amount in Ontario, Quebec and the Maritime Provinces. Agassiz, Indian Head and Brandon recorded the largest deficiencies in sunshine, and Toronto and Lindsay the greatest excessive departures.

### TEMPERATURE.

Temperature conditions for the month were in many ways very remarkable. The average was exceeded from the Qu'Appelle to the Lower St. Lawrence Valley, also in the south-western portion of the Maritime Provinces, but elsewhere in Canada it was not maintained. Two large areas of excessive and deficient temperature conditions of almost equal opposite values prevailed in the Dominion. The deficient area, with temperatures from 6° to 8° below average, embraced practically the whole mainland of British Columbia; whilst the excessive area, with temperatures from 6° to 8° above average, covered the country from the western portion of Lake Superior to Central and Southern Ontario. Toronto was 6° above average; the warmest August since records have been kept, which is from 1816, and from the conditions generally prevailing it is fair to assume that in Ontario, as a whole, August, 1900, was the warmest August for sixty years. The greater portion of the North-West Territories was from 0° to 3° below average, and Eastern Quebec and the eastern portion of the Maritime Provinces, was from average to 1° below.

*The Highest and Lowest Temperatures in each Province during August, 1900 were:*

British Columbia,	94.4 on 1st at Nelson and Tobacco Plains	26.0 on 26th at Barkerville.
North-west Territories,	100.0 on 2nd at Muskowpetung.	26.0 on 26th at Calgary.
Manitoba,	96.0 on 2nd at Pipestone.	31.0 on 28th at Barnardo.
Ontario,	100.0 on 10th at Stony Creek.	34.0 on 1st at Bissett.
Quebec,	94.4 on 25th at St. Anne de la Pocotaire.	38.0 on 4th at Brome.
New Brunswick,	94.0 on 9th at Bathurst.	34.0 on 26th at Grand Manan.
Nova Scotia,	91.5 on 27th at Halifax.	40.4 on 24th at Sydney.
Prince Edward Island,	90.0 on 26th at Murray River.	45.0 on 25th at Murray River.

## PRECIPITATION.

The rainfall was largely above the average over the greater portion of British Columbia and the North West Territories. It was also considerably above in Manitoba, the Lake Superior region, the Nipissing District, and north of the Ottawa River. It was also a little above south and west of Lake Simcoe, to the United States Boundary, but elsewhere in Canada it was below average. The Georgian Bay and Mus-koka regions suffered much from drought; at Parry Sound the rainfall was nearly two inches below the usual amount, whereas a hundred miles further north it was above the average. In Quebec and the Maritime Provinces the deficiency was very generally from one to two inches, except in some parts of Nova Scotia where it was considerably in excess. Southern Alberta was also nearly an inch below the average. Barkerville, B.C., was as much as six inches above average; Banff, Edmonton and Battleford, three inches above; Prince Albert and Port Arthur, four inches. At some parts of Alberta snow fell freely on 25th and 26th, Calgary reporting four inches; Banff and Edmonton, one inch.



PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA AUGUST, 1960.

*c.* Barometer not reduced to Sea Level. \* Stations not furnished with Registering Thermometers.

[illegible]

St. Mary's	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	291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## PRECIPITATION AT STATIONS REPORTING RAIN, WEATHER, ETC., DURING AUGUST, 1900.

STATIONS.	RAINFALL.				THUNDER OR LIGHTNING.		REMARKS.
	Amount in inches, or Over.	No. of Days of Fair Days.	No. of Fall in Month.	Date.			
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BRITISH COLUMBIA	in.			in.			
Caulfields, .....	2.90	10	19	0.82	1		
Royal Oak, .....	0.36	2	29	0.23	23		
Goldstream Lake, .....	1.24	8	23	0.65	24		
Cumberland, .....	0.33	2	28	0.33	24		
Nanaimo, .....	0.64	3	28	0.30	24		
Vancouver, .....	3.26	9	22	0.87	6	6	
Langley, .....	2.82	6	25	0.81	24	15	
Nasas Harbour, .....	3.88	13	18	1.18	1		
Port Essington, .....	7.29	11	20	1.77	24		
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N. W. TERRITORIES.—							
Alameda, .....	1.20	9	22	1.45	10		
Crescent Lake, .....	1.81	15	16	1.09	17	2, 6, 10, 12, 17, 23	An unusually rainy month.
Stirling, .....	1.65	4	27	0.71	8		
Rouleau, .....	2.95	11	20	0.75	8	8, 15, 21, 28	
Weyburn, .....	8.03	13	18	2.70	6	2, 21	27th, violent wind-storm.
Conits, .....	1.95	7	24	0.71	30		
Didsbury, .....	2.67	16	15	0.46	9	30	
Strathcona, .....	5.67	18	13	1.23	9	1, 2, 6, 9, 12, 30, 31	25th, 9.7 in. of snow.
Beaver Hills, .....	1.80	11	20	1.87	10		25th, rain mixed with snow.
Regina, .....	3.34	18	13	0.76	9	1, 2, 6, 7, 9, 11, 16, 17, 21, 31	
Salteoats, .....	1.40	9	22	1.10	16		
Immisfal, .....	2.99	6	23	1.22	25		25th, bad snow-storm.
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MANITOBA							
Chespring, .....	2.03	9	22	0.60	11	8, 14, 18, 20, 27, 29, 30	
Elgin, .....	5.72	11	14	2.29	9	2	
Portage la Prairie, .....	4.32	10	21	0.94	9		
Selkirk, .....	4.78	11	20	1.46	11	9, 11, 12, 18, 21, 25, 28, 30, 31	
Hartney, .....	1.18	12	19	1.27	9		
Turtle Mountain, .....	1.29	11	19	1.49	8	7, 9, 11, 12, 19, 28	
Pembina Crossing, .....	5.55	8	22	1.70	8	4, 6, 8, 9, 10, 11, 12, 14, 16, 17, 18, 19, 20, 21, 22, 25, 26, 29, 30, 31	Frost on 28th.
Norquay, .....	4.21	12	18	2.65	9	8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 21, 22, 24, 25, 26, 27, 29	
Cartwright (2), .....	2.16	5	26	2.00	25		28th, 32° on low ground.
Cartwright, .....	3.97	11	20	1.32	8		
Beaver Creek, .....	5.27	12	19	1.23	11		
Belmont, .....	7.08	10	21	3.25	5	8, 9, 10, 11, 12, 20, 21, 22, 29, 30, 31	26th, hail; 28th storm of (wind)
Morden, .....	3.76	8	26	1.25	30		26th, hail.
Oakbank, .....	3.86	10	26	2.05	11	11, 26, 28	
Rapid City, .....	1.80	8	23	1.30	13		
Oak Lake, .....	1.33	8	23	1.01	9	9	
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ONTARIO							
Nottawasaga Island, .....	2.20	4	27	0.80	14		
Emerton, .....	2.44	6	25	1.37	19		
Ardan, .....	1.66	11	20	0.52	15	3, 7, 12, 15, 19, 25, 27, 28	
Dealtown, .....	2.21	8	23	0.82	20	11, 20	
Deer Park, .....	2.73	9	22	0.97	9	9	
Lynedoch, .....	3.41	7	24	1.30	18		
Lion's Head, .....	1.18	5	26	1.20	20	20, 24	
Dutton, .....	3.85	6	25	0.95	12	6, 8, 12, 17, 19, 20, 26	
Westminster, .....	3.12	7	24	1.36	19	15, 19	
Montague, .....	3.29	11	20	1.00	13		
Barrie, .....	0.82	3	28	0.40	15		
Ursa, .....	1.61	7	24	0.61	14	14, 25, 29	
Uxbridge, .....	1.81	8	23	0.65	13		
Huntsville, .....	0.50	3	28	0.25	7	14, 25	
Jermyn, .....	0.90	4	27	0.41	13	12, 27	
Emisdale, .....	1.53	7	24	0.95	14	5, 14, 25, 28, 30	14th, hail as large as hen's eggs.
Georgetown, .....	1.81	8	22	0.46	12	2, 9, 11, 14, 15, 17, 18, 19, 20, 24, 25, 26	
Midland, .....	0.99	7	24	0.24	19	11, 25	
Wyoming, .....	2.93	8	23	0.78	20	8, 12, 14, 17, 19, 20, 26	
Penetanguishene, .....	1.04	7	22	0.28	20		
Port Barwell, .....	2.37	7	24	0.84	20	13, 27	
Kitby, .....	3.10	9	22	0.95	11		7th, 100 in the shade.
Glen Elm, .....	3.17	10	21	0.83	13		6th, 100 in the shade.
Oliver's Ferry, .....	2.98	11	20	1.20	27		
Scarboro', .....	1.86	10	19	0.70	9	5, 27	
Wharton, .....	2.99	6	25	0.89	19	14, 19, 26	
Lansdowne, .....	0.75	6	25	0.51	13	10, 14, 18	
Orangeville, .....	2.42	6	25	0.70	20		
Wooler, .....	0.49	2	29	0.54	13	11, 14	
Watford, .....	2.62	7	24	0.76	14		
Sunshine, .....	1.47	9	22	0.38	19		
North Williamsburg, .....	3.04	6	25	1.35	6		
Aurora, .....	2.32	8	23	0.85	13	11, 26	
Goderich, .....	1.10	5	26	0.52	12		
Cherry Valley, .....	0.85	3	28	0.40	12		
Ennismore, .....	1.03	3	28	0.75	14		
Elgin, .....	2.91	4	27	1.55	14	15, 26	
Providence Bay, .....	2.55	9	22	1.29	20	19, 20, 25	
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NEW BRUNSWICK							
Poine Escommac, .....	2.25	10	21	1.32	20	3, 26	Fog on 7th, 27th, 28th.
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NOVA SCOTIA							
Port Morien, .....	2.28	8	23	0.79	20		
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PRINCE EDWARD ISLAND							
Mount Stewart, .....	1.84	8	23	1.25	1	26	

*Thunder recorded on*

1. Strathcona, N. Nicomen, Griffin Lake, Tobacco Plains, Moose Jaw, Knee Hill, Parrsboro', Athabasca Landing, Wolfville, Pictou, Swift Current, Victoria, Charlottetown, Truro, Quatsino, St. John.
2. Weyburn, Strathcona, Indian Head, Vancouver, Cannington Manor, Muskowpetung, Clontarf, Knee Hill, Estevan, Crescent Lake, Elgin, *Man*, Meaford, Dunnville, Welland, Uplands, Barnardo, Qu'Appelle, Quebec, Ottawa, St. Agathe des Monts.
3. Arden, Summerside, Wolfville, Point Escuminac, Pipestone, Bermuda, St. John.
4. Alberni, Pictou, Pembina Crossing, Halifax, Truro.
5. N. Nicomen, Hazlemere, Crane Lake, Muskowpetung, Moose Jaw, Emsdale, Scarboro', Ruthven, Sturgeon Falls, Agincourt, Clontarf, Uplands, Haileybury, Barnardo, Port Arthur, White River, Parry Sound, Ottawa.
6. Regina, Strathcona, Indian Head, Cannington Manor, Moose Jaw, Estevan, Brome, Crescent Lake, Pembina Crossing, Sturgeon Falls, Port Hope, Stouffville, Clontarf, Port Dover, Qu'Appelle, Swift Current, Port Stanley, Ottawa.
7. Regina, N. Nicomen, Muskowpetung, Estevan, Toronto, Turtle Mountain, Hillview, Agincourt, Stouffville, Bancroft, Welland, Beatrice, Aweme, Treherne, Elkhorn, Barnardo, Qu'Appelle.
8. Kuper Island, Crane Lake, Dutton, Wyoming, Clear Spring, Pembina Crossing, Norquay, Hillview, Belmont, Ridgetown, Aweme, Elkhorn, Minnedosa, Swift Current, Port Stanley.
9. London, Regina, Strathcona, Cannington Manor, Moose Jaw, Knee Hill, Abitibi, Deer Park, Aurora, Toronto, Selkirk, Turtle Mountain, Pembina Crossing, Norquay, Hillview, Belmont, Cockburn Island, Sturgeon Falls, Stony Creek, Agincourt, Bruce Mines, Stouffville, Clontarf, Collingwood, Stony Mountain, Haileybury, Barnardo, White River, Minnedosa, Qu'Appelle, Swift Current, Bermuda, St. Agathe des Monts, Oak Lake, Red Deer.
10. Strathcona, Crane Lake, Cannington Manor, Muskowpetung, Abitibi, Crescent Lake, Pembina Crossing, Norquay, Belmont, Port Hope, Haileybury, Barnardo, Swift Current.
11. Stratford, Lindsay, Regina, Nicola Lake, Muskowpetung, Brome, Dealtown, Georgetown, Midland, Wooler, Aurora, Murray River, Toronto, Selkirk, Turtle Mountain, Norquay, Belmont, Sturgeon Falls, Port Hope, Meaford, Stony Creek, Dunnville, Agincourt, Stouffville, Lucknow, Peterboro', Ridgetown, Welland, Clontarf, Port Dover, Birnam, Collingwood, Otonabee, Paris, Bloomfield, Erasmus, Aweme, Treherne, Durham, Qu'Appelle, Erasmus, Saugeen.
12. Strathcona, Muskowpetung, Athabasca Landing, Arden, Dutton, Wyoming, Kitley, Sunshine, Toronto, Crescent Lake, Selkirk, Turtle Mountain, Pembina Crossing, Norquay, Hillview, Belmont, Pipestone, Aweme, Treherne, Portage la Prairie, Barnardo, Minnedosa, Qu'Appelle, Swift Current, Port Stanley, Rivers Inlet, Red Deer.
13. London, Muskowpetung, Port Burwell, Sunshine, Norquay, Port Arthur, Minnedosa.
14. Stratford, Ursa, Huntsville, Emsdale, *heavy hail*, Georgetown, Midland, Wyoming, Kitley, Wiarton, Lansdowne, Sunshine, Toronto, Clear Spring, Pembina Crossing, Norquay, Hillview, Meaford, Stony Creek, Agincourt, Bancroft, Lucknow, Peterboro', Owen Sound, Clontarf, Uplands, Point Clark, Beatrice, Port Dover, Collingwood, Otonabee, Bloomfield, Aweme, Haileybury, White River, Parry Sound, Ottawa, Bissett, Gravenhurst, Oonikup.
15. Stratford, Rouleau, Langley, N. Nicomen, Vancouver, Crane Lake, Chicoutini, Arden, Westminster, Lansdowne, Sunshine, Elgin, Norquay, Welland, Lakefield, Haliburton, Quebec.
16. St. Anne, Regina, Strathcona, Cannington Manor, Muskowpetung, Moose Jaw, Abitibi, Athabasca Landing, Sunshine, Norquay, White River, Qu'Appelle, Swift Current, Bermuda, Quebec, Oonikup.
17. Cannington Manor, Muskowpetung, Athabasca Landing, Estevan, Dutton, Georgetown, Wyoming, Toronto, Crescent Lake, Hillview, Aweme, Elkhorn, Stony Mountain, Durham, Barnardo, Minnedosa, Qu'Appelle, Swift Current.
18. Lansdowne, Toronto, Clear Spring, Selkirk, Norquay, Hillview, Welland, Elkhorn, Rat Portage, Portage La Prairie, Barnardo, Port Arthur, Minnedosa, Prince Albert, Qu'Appelle.
19. Stratford, Regina, Arden, Dutton, Westminster, Wyoming, Sunshine, Turtle Mountain, Norquay, Cockburn Island, Meaford, Dunnville, Bruce Mines, Sarnia, Ridgetown, Birnam, Collingwood, Paris, Port Arthur, White River, Minnedosa, Bermuda, St. John.
20. Stratford, London, Dealtown, Lion's Head, Dutton, Wyoming, Providence Bay, Pictou, Clear Spring, Pembina Crossing, Hillview, Belmont, Meaford, Dunnville, Ridgetown, Birnam, Erasmus, Pipestone, Aweme, Durham, Port Stanley, Saugeen.
21. Weyburn, Rouleau, Crane Lake, Cannington Manor, Muskowpetung, Moose Jaw, Estevan, Selkirk, Pembina Crossing, Norquay, Hillview, Pipestone, Aweme, Elkhorn, Haileybury, Barnardo, Port Arthur, Qu'Appelle, Bermuda.



22. Norquay, Hillview, Belmont, Elkhorn, Minnedosa, Swift Current, Bermuda, Quebec.
23. Crescent Lake, Hillview, Birnam, Collingwood, Treherne, Elkhorn, Oonikop.
24. Lindsay, St. Anne, Muskowpetung, Knee Hill, Lion's Head, Norquay, Bruce Mines, Otonabee, Pipestone, Elkhorn, Barkerville, Quebec, Father Point.
25. Bathurst, Muskowpetung, Moose Jaw, Chicoutimi, Arden, Huntsville, Emsdale, Midland, Providence Bay, Selkirk, Pembina Crossing, Norquay, Meaford, Bancroft, Lucknow, Upland, Bala, Beatrice, Bloomfield, Erasmus, Aweme, Elkhorn, Haileybury, Durham, White River, Minnedosa, Saugeen, Bissett, Gravenhurst, Coldwater.
26. Stratford, London, Bathurst, Dutton, Ursa, Georgetown, Wyoming, Port Burwell, Wiarton, Sunshine, Aurora, Elgin, Summerside, Parrsboro', Murray River, Moncton, Pembina Crossing, Norquay, Mount Stewart, Point Escuminac, Stony Creek, Dunnville, Lucknow, Ridgetown, Point Clark, Port Dover, Birnam, Collingwood, Erasmus, Portage La Prairie, Durham, Minnedosa, Swift Current, Quebec, Charlottetown, Truro.
27. Lindsay, Arden, Kitley, Scarboro', Sunshine, Hamilton, Wolfville, Toronto, Clear Spring, Norquay, Stony Creek, Agincourt, Bancroft, Peterboro', Welland, Port Dover, Halifax, Otonabee, Haliburton, Bloomfield, Stony Mountain, Port Stanley, Saugeen, Truro, Gravenhurst, Coldwater.
28. Regina, Rouleau, Cannington Manor, Muskowpetung, Moose Jaw, Arden, Sunshine, Selkirk, Turtle Mountain, Hillview, Meaford, Port Dover, Aweme, Barnardo.
29. Ursa, Clear Spring, Pembina Crossing, Norquay, Hillview, Belmont, Pipestone, Treherne, Portage La Prairie, Elkhorn, Stony Mountain, Barnardo, Minnedosa, Bermuda.
30. Didsbury, Reclamation Farm, Muskowpetung, Knee Hill, Clear Spring, Selkirk, Pembina Crossing, Hillview, Belmont, Sturgeon Falls, Bruce Mines, Bancroft, Clontarf, Uplands, Bloomfield, Aweme, Stony Mountain, White River, Minnedosa, Swift Current, Medicine Hat, Bissett.
31. Strathcona, Reclamation Farm, Muskowpetung, Moose Jaw, Athabasca Landing, Pembina Crossing, Belmont, Stony Mountain.

*Aurora recorded.*

Where the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the feeblest in brilliancy.

2. Port Dover.
6. Channel Island, IV.
12. Channel Island, IV.
15. Chicoutimi.
16. Chicoutimi.
17. Strathcona, IV; Red Deer, IV.
19. Chicoutimi.
21. Channel Island, IV.
24. Aweme, III.
25. Pembina Crossing, IV.
26. Haileybury, IV; Aweme, IV; St. Agathe des Monts, IV.
29. Red Deer, III.
30. Cape Magdalen, Cape Chatte, II.
31. Cape Chatte, IV.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE  
SUN WAS ABOVE THE HORIZON IN THE MONTH OF AUGUST, 1900.

Hour-Entries.

	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria	0.09	0.02	0.43	0.55	0.56	0.58	0.61	0.61	0.70	0.71	0.74	0.68	0.65	0.59	0.20	
Kuper Island	0.00	0.02	0.44	0.42	0.41	0.50	0.50	0.54	0.63	0.58	0.66	0.58	0.66	0.63	0.40	S
Agassiz	0.00	0.00	0.25	0.33	0.37	0.39	0.43	0.43	0.42	0.39	0.38	0.44	0.34	0.79	0.02	
Battleford	0.15	0.33	0.44	0.55	0.59	0.62	0.60	0.64	0.65	0.64	0.59	0.57	0.54	0.42	0.13	
Indian Head	0.00	0.00	0.01	0.27	0.43	0.50	0.47	0.58	0.62	0.52	0.56	0.52	0.49	0.50	0.05	
Brandon	0.02	0.32	0.43	0.48	0.49	0.52	0.58	0.63	0.63	0.62	0.61	0.52	0.41	0.05	0.00	
Winnipeg	0.00	0.25	0.46	0.46	0.60	0.63	0.64	0.63	0.69	0.59	0.58	0.58	0.56	0.49	0.15	
Durham	0.01	0.02	0.27	0.61	0.66	0.71	0.83	0.78	0.78	0.78	0.82	0.75	0.68	0.62	0.31	0.05
Woodstock	0.00	0.11	0.45	0.58	0.78	0.84	0.79	0.81	0.84	0.82	0.72	0.74	0.61	0.35	0.10	0.02
Toronto	0.00	0.03	0.34	0.70	0.72	0.81	0.84	0.83	0.81	0.79	0.75	0.73	0.74	0.61	0.30	S
Lindsay	0.00	0.15	0.54	0.59	0.71	0.78	0.79	0.79	0.78	0.75	0.70	0.69	0.64	0.57	0.51	0.11
Barrie	S	0.13	0.56	0.66	0.79	0.84	0.85	0.82	0.74	0.78	0.79	0.76	0.73	0.53	0.03	0.00
Kingston	0.00	0.02	0.22	0.65	0.75	0.79	0.81	0.80	0.78	0.83	0.83	0.72	0.56	0.42	0.06	0.00
Ottawa	0.00	0.13	0.67	0.70	0.70	0.73	0.78	0.76	0.83	0.76	0.74	0.67	0.61	0.53	0.12	0.00
Montreal	0.00	0.07	0.43	0.63	0.67	0.77	0.78	0.76	0.73	0.71	0.66	0.69	0.42	0.04	S	0.00
Fredericton	0.15	0.41	0.51	0.55	0.69	0.76	0.70	0.71	0.66	0.66	0.68	0.67	0.58	0.28	0.00	0.00
	Victoria.	Kuper Island.	Agassiz.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Durham.	Woodstock.	Toronto.	Lindsay.	Barrie.	Kingston.	Ottawa.	Montreal.	Fredericton.
Mean proportion for month (Constant sunshine being 1)	0.51	0.46	0.31	0.52	0.39	0.45	0.51	0.63	0.61	0.67	0.61	0.64	0.59	0.62	0.60	0.57
Difference from average	0.05	0.09	0.18	0.06	0.12	0.15	0.09	-	0.07	0.09	0.11	0.08	0.02	-	0.02	0.07
Maximum daily amount	0.89	0.89	0.81	0.90	0.80	0.91	0.94	0.90	0.87	0.90	0.91	0.90	0.85	0.90	0.92	0.96
Date	14	3	29	14	20	15	15	29	31	29	29	29	29	29	1	31
No. of days completely clouded	2	1	9	3	6	4	5	2	3	2	2	2	1	1	2	2

## FORECASTS FOR AUGUST, 1900

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 943. These were divided as follows:

DISTRICT.	No. ISSUED.	VERIFIED.			Percentage.
		No. Fully	No. Partly	No. Not	
MANITOBA .....	85	70	4	11	84.7
LAKE SUPERIOR .....	106	85	14	7	86.8
LOWER LAKE REGION .....	106	90	5	11	87.7
GEORGIAN BAY.....	107	93	4	10	88.8
OTTAWA VALLEY.....	99	89	2	8	90.9
UPPER ST. LAWRENCE .....	99	82	4	13	84.8
LOWER ST. LAWRENCE .....	113	93	9	11	86.3
GULF .....	113	95	10	8	88.5
MARITIME PROVINCES .....	115	94	11	7	87.8
<b>TOTAL .....</b>	<b>943</b>	<b>791</b>	<b>66</b>	<b>86</b>	<b>87.4</b>

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,  
*Director*

Meteorological Office, Toronto,  
26th Sept., 1900.

ABSTRACT of Observations at Fort Macpherson, Peel River, July 1899 to June, 1900. Latitude, N. 67° 0' ; Longitude, W. 134° 4'. Height above Sea,        feet.

[illegible]

ABSTRACT of Observations at Hay River, Great Slave Lake, July 1899 to May 1900.—Latitude N.  $69^{\circ} 51'$ ;  
Longitude, W.  $115^{\circ} 20'$ . Height above Sea,        feet.

[illegible]



## ABSTRACT of Observations in the Yukon Territory during July and August, 1900.

DAY.	DAWSON.						WHITE HORSE.			
	JULY, 1900.			AUGUST, 1900.			JULY, 1900.		AUGUST, 1900.	
	TEMPERATURE.		Barom-eter Pressure at 32	TEMPERATURE.		Barom-eter Pressure at 32	TEMPERATURE.		TEMPERATURE.	
	Highest.	Lowest.		Highest.	Lowest.		Highest.	Lowest.	Highest.	Lowest.
			in.			in.				
1	71.8	57.9	28.79	69.7	42.6	28.69			64.0	41.0
2	77.8	52.1	28.76	73.9	41.8	28.76			75.0	42.0
3	79.4	55.1	28.67	71.5	49.3	28.94			71.5	46.6
4	76.5	51.8	28.60	65.0	48.1	28.93			62.0	46.0
5	74.4	47.3	28.72	64.9	42.6	28.94			65.0	45.2
6	77.0	47.1	28.77	64.9	50.7	28.83			67.0	40.0
7	71.3	53.3	28.83	72.2	50.1	28.86			69.5	52.0
8	70.4	48.1	28.82	81.3	55.7	28.91			78.0	48.6
9	71.0	42.1	28.87	70.0	50.0	28.61			70.5	52.5
10	60.5	52.7	28.72	69.8	47.1	28.59			70.0	48.5
11	73.0	49.8	28.88	60.0	38.9	28.78			60.5	45.0
12	76.1	48.7	28.84	61.5	47.9	28.76			60.0	36.0
13	80.1	50.1	28.87	58.6	47.9	28.77			64.0	41.0
14	85.9	48.7	28.80	60.1	40.7	28.76			62.0	42.5
15	75.8	47.3	28.65	61.4	46.1	28.82			64.0	39.0
16	76.0	55.7	28.63	61.6	41.8	28.51	87.0	60.0	62.0	35.0
17	76.8	48.7	28.85	58.8	44.2	28.84	90.0	47.0	61.0	41.5
18	65.0	54.3	28.67	56.3	38.8	28.79	69.8	51.5	62.0	44.0
19	53.8	51.8	28.74	58.5	41.1	28.88	52.0	45.0	63.0	37.5
20	70.4	40.1	28.85	61.6	43.0	29.16	79.0	39.0	64.0	29.0
21	68.5	43.9	28.90	58.5	43.2	28.82	79.5	57.5	62.0	39.0
22	68.2	52.6	28.96	52.4	39.7	28.72	70.0	51.0	53.0	43.0
23	71.0	48.2	28.84	57.8	39.7	28.97	80.0	46.5	57.0	34.0
24	73.2	49.8	28.74	62.0	30.0	28.94	83.0	52.5	61.0	42.0
25	73.0	52.1	28.83	59.5	37.9	28.72	83.0	50.6	60.0	46.5
26	71.2	54.0	28.81	59.8	41.6	28.69	78.0	52.0	61.0	43.0
27	71.7	47.9	28.72	46.8	34.7	28.76	84.0	43.5	52.0	34.0
28	68.9	53.3	28.76	58.9	37.7	28.54	79.0	52.5	51.0	46.0
29	62.8	53.2	28.78	57.8	43.1	28.38	71.5	51.5	59.0	47.5
30	69.5	53.7	28.77	57.8	46.5	28.41	79.0	44.0	57.5	37.5
31	70.0	46.7	28.75	59.3	37.7	28.66	79.0	41.0	58.0	45.0
	72.0	50.3	28.79	62.3	43.9	28.77			62.8	42.3
Mean temperature	61.2			53.1					52.6	

# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

SEPTEMBER, 1900.

No. 9

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of September did not differ much from the normal, excepting in Manitoba and portions of Quebec where the precipitation was considerably above average, and in Ontario where the temperature was much in excess of average. There was also some exceptionally fine weather in British Columbia and unusual snowstorms in Manitoba and the North-west Territories. Frosts were reported from some stations in each province, excepting in Prince Edward Island, and in the Territories they were quite severe. During the last few days of the month the signs of autumn decay were made much more apparent by the change of colour and defoliation of trees, this being more especially the case in Manitoba and the North-west Territories where in many instances the trees were quite bare.

In British Columbia the weather was exceptionally fine and dry whilst the temperature was above average. Only one storm of importance was reported and although frosts occurred at many places on or after the 25th, vegetation was quite green almost everywhere, few trees showing signs of autumn decay.

The weather in the North-west Territories was exceptionally cool, gloomy and wet, the mean temperature and the proportion of sunshine being below average and the precipitation above. Strong winds and gales were unusually frequent and several snowstorms, followed by hard frost were recorded. These exceptional conditions were very damaging to farm crops, and vegetation had quite a wintry appearance on the 30th.

In the Province of Manitoba the weather conditions were very similar to the conditions in the Territories, low temperatures, clouded skies, rain, snow and hard frost being exceptionally frequent. The condition of vegetation was also similar, trees being defoliated and plants withered at an unusually early date.

In Ontario the weather was unusually warm and in the south western portion the precipitation was deficient at most places. Elsewhere the rainfall with some local exceptions was average or slightly above, and generally throughout the Province other conditions were normal. On the 12th a heavy gale occurred and some damage to the fruit crops and trees was caused thereby. Frosts which occurred were generally confined to more northern districts and little damage was done to vegetation, the trees and plants generally in the southern portion being perfectly green on the 30th, whilst in the northern portion they had only just taken on autumnal colours.

The weather in the Province of Quebec was somewhat warmer than usual and during the first week was exceedingly fine; after the 7th however frequent showers occurred and the total precipitation exceeded the average at most places. Frosts occurred in some districts but they were nowhere severe and on the 30th vegetation was in normal condition.

In New Brunswick the weather did not differ much from average but in most districts it was somewhat finer, warmer and dryer than usual. A severe northwest gale occurred on the 12th, when much damage was done to fruit and other crops. At St. John the velocity of the wind reached 60 miles per hour during this gale. Frosts were reported from a few places and vegetation was changing colour by the 25th.

In Nova Scotia the weather conditions varied with the district, but with the exception of an unusually heavy rainfall at Pictou, these conditions did not differ much from the normal. Clear skies were more frequent than usual in most districts and although some severe storms passed over portions of the Province the west

altogether was exceedingly fine. Gales occurred on the 12th, 13th and 18th and exceptionally severe thunder storms on the 22nd and 23rd, over three inches of rain falling at Picton during one of these latter storms. At Low Point the wind reached a velocity of 64 miles per hour on the 13th and 53 miles on the 18th. Frosts occurred at several places and defoliation of trees had set in by the 25th.

In Prince Edward Island the weather was almost normal but it was somewhat warmer and wetter than usual. During the early part of the month it was exceedingly fine, after which it became wet and stormy. No frost was reported and little change had taken place in the colour of vegetation by the 30th. F. F. PAYNE.

#### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure ranged from 0.05 to 0.10 of an inch above average in Manitoba and the North-west Territories, and generally from the Great Lakes to the Gulf of St. Lawrence it was very nearly average. The largest positive departure reported was 0.11 at Medicine Hat, N.W.T. and the largest negative departures were 0.04 at Port Arthur and also at stations in Nova Scotia and 0.03 at St. John's, Newfoundland.

#### HIGH AREAS.

There was a considerable amount of high pressure during the month and eight areas were sufficiently well marked to be charted.

No. 1 spread into the Lake Region between the 3rd and 4th, from the westward, and on the 5th passed south-eastward, and off the United States Atlantic Coast. It was a well defined area accompanied by very fine weather. No. 2 was a very moderate area which between the 1th and 7th passed from Northern Alberta, over the Lake Region and off the Nova Scotian Coast. It was attended by fine weather, and in Northern Ontario the night temperatures were near the freezing point. No. 3 travelled on the 7th from Northern British Columbia into the North-west Territories, thence between the 8th and 11th over Manitoba, Ontario, Quebec and the Maritime Provinces; it was an area of very moderate energy. No. 4 followed almost precisely the same path as No. 3; it was also a very moderate area, but was accompanied by chilly night temperatures, and in Manitoba on the 13th, and the Northern Ottawa Valley on the 11th, local frosts were experienced. No. 5 was situated in Alberta on the 14th, attended by cold weather. On the morning of the 15th it was centered near Prince Albert as an important area, whence it moved slowly southeastward over Manitoba to Lake Michigan, then eastward over Ontario and off the New England Coast. During its presence in the Territories and Manitoba sharp night frosts occurred, and on the 18th and 19th it was accompanied by chilly nights from Ontario to the Maritime Provinces. No. 6 was centered on the North Pacific Coast on the morning of the 19th. After reaching the Middle States on the 23rd it increased somewhat in energy and spread northward over Ontario, Quebec and the Maritime Provinces, attended by fine and very warm weather. No. 7 was situated in Northern British Columbia on the morning of the 24th, whence it moved south-eastward over the North-west Territories to the North-west States, thence eastward into Canada again, and reached the Maritime Provinces on the night of the 28th. During its presence in the Territories freezing weather occurred, the temperature falling to 14° in Alberta, but from Ontario to the Maritime Provinces it was not accompanied by frosts. No. 8 was a moderate area which moved into Ontario on the 30th, having originally passed over the Western States from the Pacific Coast. Its ultimate course was over the St. Lawrence Valley to the Gulf, accompanied by fine weather.

#### LOW AREAS.

Ten areas of low pressure have been charted; the most important being No. 3, a West India hurricane which caused great destruction of property as it passed across the United States and Canada. No. 10 was also, in the Territories and Manitoba, a very important depression.

No. 1 was situated in the vicinity of Nebraska on the 1st, whence it travelled to the north-ward of Lake Superior and out of the range of observation. It caused numerous showers and thunderstorms in Manitoba and the Lake Superior district, and scattered thunderstorms in Ontario and Quebec. No. 2 developed in the North-west States, and on the morning of the 4th was centered near Miles City, Dakota. It travelled between the 5th and 6th over Lake Superior and far north of the St. Lawrence Valley to the Gulf. It caused showers and local thunderstorms generally from the Rocky Mountains to our Atlantic Coast but no very heavy rain-falls were recorded. No. 3 was the great storm which swept over Canada from the Lakes to the Maritime Provinces between the evenings of the 11th and 12th. The storm originated in the West Indies. On the 5th it was over Cuba, and on the 8th it swept over Texas. After leaving Texas it became greatly reduced in energy, but during the night on the 11th a rapid redevelopment began and the storm steadily gained in strength until it was lost to observation after leaving the Newfoundland Coast on the 13th. Great destruction was caused by the storm, especially on our coasts, where the fishing fleets suffered very severely in many localities; many vessels were also wrecked. No. 4 was situated in the North Saskatchewan



Valley on the 16th, whence it moved far north over Canada and to the northward of the Gulf of St. Lawrence. It was of very moderate energy and only caused scattered showers in the Lake Superior District and the Lower St. Lawrence Valley. No. 5 travelled between the 13th and 14th from the British Columbia Coast to the North-west States, thence over the Lake Region and the Ottawa and St. Lawrence Valleys, uniting during the night of the 16th, over the Maritime Provinces with No. 6. It caused heavy rains from the Rocky Mountains to Lake Superior and a more moderate rainfall in Ontario and Quebec together with strong winds and gales, the gale being heavy in portions of the Lake Region, especially on Lake Superior. No. 6 travelled quickly as a minor depression from the vicinity of New Orleans on the Gulf of Mexico north-easterly to the Maritime Provinces, where on the 16th it became united with No. 5. It was chiefly noticeable for its accompanying heavy rainfalls, at Yarmouth it caused 2.52 inches, and at Halifax 1.88 inches. No. 7 was situated near Bermuda on the 16th; it afterwards passed far south of Nova Scotia, but owing to its influence a fresh northeasterly gale prevailed on the 18th locally, in the Maritime Provinces. No. 8 moved between the 18th and 19th from Kansas to Lake Superior, thence slowly eastward to the Maritime Provinces, reaching Nova Scotia on the 23rd. It was accompanied by numerous showers and thunder-storms from Manitoba to our Atlantic Coast, the thunderstorms being locally very heavy in the Maritime Provinces. No. 9 was a moderate area which appeared in the North Saskatchewan valley on the 20th, and afterwards passed far northward out of the range of observation. It caused a few showers in Manitoba and the Lake Superior region. No. 10 developed on the western side of the Rocky Mountain range on the 22nd, and on the 23rd was centered near Calgary, Alta., as a severe storm. After leaving Manitoba on the night of the 24th it passed far north of Lake Superior, out of the range of observation. It caused an unusually heavy gale in most parts of the Territories and Manitoba, attended by heavy rain, which in many localities turned to snow. It also gave a fresh gale on Lake Superior and moderate local gales on the Georgian Bay and Lake Huron.

#### WINDS.

In British Columbia the winds were usually light to moderate and variable. On the 22nd, the force of a gale was reached from a south-westerly direction and on six other occasions fresh to strong breezes occurred. In the North-west Territories and Manitoba for about half the month, the winds were from a westerly direction at other times they were variable; fresh to strong breezes were of frequent occurrence and on several occasions the force of a gale was reached.

In Ontario, Quebec and the Maritime Provinces the westerly was more in evidence than any other direction but there were many days of variable winds. In the Gulf of St. Lawrence there was a fair preponderance of fresh to strong breezes but elsewhere, irrespective of three gales on the Lakes and two in the St. Lawrence Valley and the Maritime Provinces, the winds seldom exceeded a moderate or fresh breeze. The gales occurred between the 11th and 12th, the 16th, 18th and the 23rd-24th. The storm of the 11th and 12th was a particularly heavy one from the Lower Lake Region to our Atlantic Coast but it did not reach Lake Superior. It caused much destruction of property and many wrecks. The storm of the 16th to 18th was moderate except locally where it was reported to have been heavy, especially the case in Cape Breton. The storm on the 24th and 25th was quite heavy on Lake Superior but it was only locally felt on the Lower Lakes and then moderately. The storms were all successfully warned but unfortunately although ample notice was given of the approach of the storm on the 12th, the stations on the Gaspé Coast did not receive the warning owing to interruption of the telegraph service.

#### TEMPERATURE.

Temperature was just about average in British Columbia, Quebec and the Maritime Provinces, a little below average in Alberta and Assiniboia, a little above average in Manitoba, and considerably above in Ontario. Toronto was 5° above average, the warmest September but two, (1865, 1881) since records have been kept, which is from 1810. Ontario stations were all from 3° to 6° above average, consequently it is fair to assume that this has been the third warmest September during the last sixty years.

#### *The Highest and Lowest Temperatures in each Province during September, 1900, were:*

British Columbia,	87° 0 on 13th at Agassiz.	22° 0 on 26th at Tobacco Plains.
North-west Territories,	85° 0 on 6th at Gatesgarth.	10° 0 on 16th at Muskowpetum.
Manitoba,	89° 0 on 1th at Elkhorn.	24° 0 on 17th at Barnard.
Ontario,	100° 0 on 1st at Point Clark.	25° 0 on 18th at Savanne.
Quebec,	92° 5 on 1th at Richmond.	29° 0 on 19th at Richmond.
New Brunswick,	95° 0 on 3rd at Bathurst.	28° 0 on 19th at Sussex.
Nova Scotia,	85° 0 on 3rd at Pictou.	28° 0 on 20th at Truro.
Prince Edward Island,	86° 0 on 3rd at Murray River.	31° 0 on 22nd at Murray River.

## BRIGHT SUNSHINE.

Bright sunshine was in excess of the average in British Columbia, below average in the North-west Territories and in Manitoba, and differed but little from average in the more eastern portions of the Dominion. Toronto and Victoria registered the largest amounts, respectively 57 and 54 per cent, while Agassiz, B.C. and Indian Head, N.W.T. registered the smallest amounts, respectively 36 and 37 per cent of the possible.

## PRECIPITATION.

Precipitation was below average in Ontario south and west of Lake Simcoe, except locally in the Niagara Peninsula, the deficiency being very generally from an inch to an inch and a half. In New Brunswick it was also for the most part below, St. John being as much as an inch below. The greater portion of British Columbia was also below average, many localities giving over an inch. Elsewhere throughout the Dominion it was above the average. The abnormally heavy precipitation in the Territories and Manitoba was most remarkable; at Edmonton the normal was exceeded by two inches, at Calgary by three inches and at Winnipeg by over two inches. Several heavy falls of snow occurred in the Territories, which is also very unusual so early in the season. At Ottawa the rainfall was about one inch above the average, at Father Point it was two inches above, at Halifax 1.1 inches above, and at Pictou 1.3 above.



# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, SEPTEMBER, 1900.

a. Barometer not reduced to Sea Level. \* Stations not furnished with Registering Thermometers.

STATION.	Latitude N.	Longitude W.	Elevation above sea level, in feet.		PRESSURE.		TEMPERATURE.				Mean amount of cloud.	DIRECTION OF WIND FROM								VELOCITY OF WIND			PRECIPITATION.		Days with 1/10 of more.	No. of Anomalous.	No. of Fog.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			Highest.	Lowest.	Range.	Mean.	Difference from average.	Years observed.	Highest.	Lowest.		Date.	Lowest.	Mean daily range.	Mean temperature of the day.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Total number of hours.				Mean miles per hour.	Highest day's velocity.	Date and direction from.	Amount.	Difference from Average.	Inches.	Inches.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Indian Head.....	50 28 103 40	102 4	1024	in.	in.	in.	59.9	—	1.311	78.0	6	25.0	30.21	0	4	7	4	17	14	1	10	33	0	90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....





## OBSERVATIONS AT STATIONS REPORTING RAIN, WEATHER, ETC., DURING SEPTEMBER, 1900.

STATIONS.	RAINFALL.				REMARKS.
	Amount in inches.	No. of Days 30 or Over.	No. of Fair Days.	Heaviest Fall in Month.	Date.
BRITISH COLUMBIA—					
Nanaimo	1.03	4	26	0.38	13
Goldstream Lake	2.03	8	22	1.02	22
Caulfields	1.18	8	26	0.88	22
Camberland	0.71	7	23	0.89	22
Royal Oak	1.45	5	25	0.70	22
Vancouver	2.31	9	21	1.11	22
Langley	2.15	2	29	1.63	21
Port Essington	1.87	13	17	1.99	27
Nas Harbour	3.86	11	19	1.48	26
N. W. TERRITORIES—					
Crescent Lake	2.35	6	21	0.80	9
Beaver Hills	2.31	5	21	0.77	14
Strathcona	2.43	8	21	1.52	23
Rouleau	2.69	7	22	1.04	8
Regina	2.21	9	21	0.83	8
Imperial	1.31	8	22	2.24	23 24
Weyburn	3.81	6	21	1.10	14
Stirling	2.56	4	21	1.69	21
Conits	2.94	11	18	0.88	8
Saltecoats	1.95	3	26	0.86	9
Didsbury	4.81	12	18	1.52	14 15
Alameda	3.95	6	21	1.01	10
MANITOBA—					
Swan Lake	2.85	8	22	1.55	25
Clearspring	5.58	16	20	1.71	24
Norquay	4.85	12	15	1.70	25
Rapid City	1.81	8	22	1.50	14
Hartney	5.62	11	19	1.63	25
Cartwright	5.61	10	20	1.59	14
Oakbank	4.59	11	17	1.35	21
Beaver	1.65	6	22	1.71	25
Pembina Crossing	3.85	7	17	1.15	14
Selkirk	1.06	12	18	1.25	1
Oaklake	6.39	7	23	2.45	25
Elgin	5.26	15	13	1.20	14
Morden	1.43	6	24	1.47	21
ONTARIO					
Georgetown	1.33	4	26	0.50	17
Georgetown	1.20	11	17	0.41	29
Chayuga	2.35	5	25	0.95	29
Nottawasaga Island	2.90	7	23	1.00	28
Amora	1.21	6	24	0.44	20
Emdale	5.80	15	15	1.39	12
Wyoming	2.18	6	21	0.65	29
Port Burwell	1.80	7	23	0.61	29
Lynedoch	3.19	4	26	1.75	4
Dealtown	1.30	5	25	0.38	19
Sunshine	1.80	9	21	0.73	29
Ursa	2.97	12	19	0.56	3
Elgin	2.82	7	23	0.75	21
Providence Bay	5.09	11	16	1.00	11
Princeton	1.84	3	27	1.13	29
Warton	2.10	10	20	0.52	14
Emmimore	2.55	6	24	0.70	21
Lansdowne	1.11	3	27	0.91	16
Parma	1.54	6	24	1.03	30
Glen Elm	3.18	7	23	1.25	16
Lion's Head	2.82	8	22	0.76	14
Cherry Valley	2.95	5	25	1.20	29
Jernyn	3.77	7	23	1.50	3
Midland	3.22	9	21	0.90	3
Deer Park	4.93	7	23	0.62	29
Kitley	3.49	7	23	1.18	16
Wooder	2.98	7	23	0.91	29
Arden	3.66	12	18	0.68	21
Montague	3.11	8	22	0.90	16
Oliver's Ferry	3.08	7	23	1.00	16
Croydon	2.32	5	25	0.90	29
Wattford	1.84	6	24	0.70	29
Wilton Grove	1.72	5	25	0.83	29
Dutton	1.91	6	24	0.85	28
Scarboro'	1.72	7	21	0.60	29
North Williamsburg	4.30	7	23	1.50	29
Orangeville	2.58	5	25	0.98	21
Huntsville	5.78	9	21	1.50	6
Uxbridge	1.58	4	26	0.56	20
Listowel	2.35	4	26	0.86	20
NEW BRUNSWICK					
Poinc Escuminac	2.23	9	21	1.22	12
NOVA SCOTIA					
Port Morien	2.73	8	22	0.71	12 13
PRINCE EDWARD ISLAND					
Mount Stewart	3.35	4	26	1.50	16
Month dull, very little sunshine.					

*Thunders recorded on -*

1. Stony Mountain, Rat Portage, Hillview, Portage la Prairie, Treherne, Port Burwell, Clearspring, Norquay, Cartwright, Oakbank, Pembina Crossing, Selkirk, Belmont, Elgin.
2. Bruce Mines, Sturgeon Falls, Cockburn Island, Red Deer, Point Clark, Port Burwell, Norquay, Providence Bay, Searboro, White River. Haileybury.
3. Lindsay, London, St. Anne de la Pocatiere, St. Agathe des Monts, Chicoutimi, Brome, Sturgeon Falls, Dunnville, Kimmount, Stony Creek, Hamilton, Brantford, Agincourt, Lakelfield, Peterboro, Welland, Clontarf, Collingwood, Otonabee, Haliburton, Birnam, Emsdale, Ursa, Jermyn, Midland, Sunnyside, White River, Quebec, Toronto.
4. Pipestone, Clearspring, Arden, Cartwright, Pembina Crossing.
5. Bruce Mines, Sturgeon Falls, Cockburn Island, Stony Creek, Estevan, Bancroft, Paris, Georgetown, Nottawasaga Island, Clearspring, Norquay, Lion's Head, Pembina Crossing, Belmont, Haileybury.
6. Lindsay, Gravenhurst, Coldwater, Durham, Brome, Dunnville, Stony Creek, Hamilton, Erasmus, Lakelfield, Welland, Otonabee, Haliburton, Bala, Aurora, Emsdale, Port Burwell, Providence Bay, Midland, Searboro, Stratford, Kingston, Parry Sound, Toronto, Uplands.
7. Reclamation Farm. (*W. Kootenay*).
8. Swift Current.
9. Muskowpetung, Moose Jaw, Qu Appelle, Swift Current.
10. Collingwood, Ursa, Wiarton.
11. Lindsay, Coldwater, Durham, Peterboro, Bancroft, Otonabee, Beatrice, Bala, Emsdale, Lansdowne, Huntsville, Parry Sound, Saugeen, Toronto, Uplands, Meaford.
12. Bathurst, Summerside, Collingwood, Sunshine, Parry Sound, Charlottetown.
13. Estevan, Cumberland.
14. MacLeod, Summerside, Muskowpetung, Moose Jaw, Clearspring, Regina, Oakbank, Pembina Crossing, Belmont.
15. Abitibi, Bruce Mines, Cockburn Island, Stony Creek, Hamilton, Agincourt, Bloomfield, Welland, Georgetown, Port Burwell, Norquay, Providence Bay, Searboro, White River, Toronto, Pembina Crossing.
16. Deseronto, Durham, Alberni, Kimmount, Bancroft, Clontarf, Otonabee, Wooler, Haliburton, Birnam, Emsdale, Jermyn, Deer Park, Kitley, Arden, Montague, Stratford, Bisett, Kingston, Ottawa, Parry Sound, Toronto, Meaford.
17. Truro, Tobacco Plains, Yarmouth.
18. Yarmouth, Bermuda, Pembina Crossing.
19. Treherne, Wyoming, Princeton, Pembina Crossing.
20. Gravenhurst, Coldwater, Deseronto, Sturgeon Falls, Hamilton, Agincourt, Erasmus, Owen Sound, Stouffville (*hail*), Collingwood, Beatrice, Point Clark, Georgetown, Nottawasaga Island, Aurora, Emsdale, Wyoming, Providence Bay, Wiarton, Midland, Montague, Dutton, Searboro, Stratford, Parry Sound, Toronto, Uplands, Durham.
21. Lindsay, Coldwater, St. Stephen, Brome, Dunnville, Port Hope, Pipestone, Red Deer, Peterboro', Bancroft, Welland, Otonabee, Birnam, Bala, Georgetown, Port Burwell, Sunshine, Elgin, *Ont.*, Princeton, Jermyn, Wooler, Arden, Bissett, Ottawa, Saugeen, Quebec, Meaford.
22. Truro, Summerside, Pictou, Parrsboro', N. Nicomen, Griffin Lake, Hillview, Charlottetown, Winnipeg, Pembina Crossing.
23. Truro, Moncton, Brantford.
24. Hillview, Pipestone, Clearspring, Bermuda, Minnedosa, Aweme, Oakbank, Pembina Crossing, Belmont.
25. Georgetown, Norquay, Providence Bay, Dutton, White River.
26. Lindsay, Deseronto, London, Durham, St. Agathe des Monts, Bruce Mines, Paris, Cockburn Island, Hamilton, Brantford, Erasmus, Collingwood, Birnam, Georgetown, Lansdowne, Searboro, Stratford, Kingston, Ottawa, Quebec, Toronto. Haileybury.
27. Chicoutimi, Athabasca Landing, Peterboro', Arden, Ottawa, Father Point.
28. Gatesgarth, Muskowpetung, Red Deer, Moose Jaw.
29. Brantford, Princeton, Bermuda.
30. Bermuda.



*Aurora recorded—*

Where the class of aurora is noted by the observer, it is given (*I*) being the brightest, (*IV*) the faintest, and *III* the brilliancy.

3. Haileybury, IV.
4. Minnedosa, IV.
13. Point Escuminac, IV.
15. Truro, Barnardo, IV; Strathcona, Grenfell, Athabasca Landing, Hillview, Aweme, III; Pembina Crossing, II.
16. Barnardo, IV; Minnedosa, III.
18. St. Anne de la Pocatiere, Father Point, III; Haileybury, IV.
19. St. Anne de la Pocatiere, Father Point, III.
21. Gravenhurst, IV; Red Deer.
22. Barnardo, III; Hillview, Aweme, II; Pembina Crossing, II.
23. Barnardo, I.
27. Athabasca Landing, Red Deer, Minnedosa, II; Aweme, III; Pembina Crossing, Haileybury, III.
28. Cape Magdalen, Cape Chatte, Father Point, III; Minnedosa, IV; Aweme, IV; Pembina Crossing, Haileybury, IV.
29. Point Escuminac, III.
30. Minnedosa, III.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE  
SUN WAS ABOVE THE HORIZON IN THE MONTH OF SEPTEMBER 1906.

	Hours Ending.															
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria	0.01	0.12	0.53	0.54	0.56	0.66	0.72	0.61	0.63	0.73	0.62	0.62	0.37	0.02		
Kuper Island	0.00	0.07	0.38	0.55	0.62	0.66	0.70	0.64	0.64	0.64	0.65	0.59	0.42	0.02		
Agassiz	0.00	0.07	0.48	0.37	0.47	0.52	0.56	0.54	0.55	0.57	0.54	0.27	0.07	0.03		
Battleford	0.01	0.17	0.52	0.54	0.54	0.49	0.55	0.64	0.49	0.61	0.56	0.47	0.36	0.19		
Indian Head	0.00	0.00	0.08	0.44	0.52	0.54	0.55	0.61	0.55	0.53	0.46	0.31	0.05	0.00		
Brandon	0.10	0.40	0.54	0.57	0.63	0.54	0.59	0.55	0.53	0.47	0.36	0.12	0.00	0.00		
Winnipeg	0.06	0.22	0.41	0.45	0.45	0.53	0.52	0.47	0.51	0.51	0.54	0.45	0.14	0.00		
Durham	0.00	0.13	0.38	0.52	0.60	0.61	0.67	0.68	0.73	0.69	0.70	0.58	0.45	0.13		
Woodstock	0.00	0.10	0.33	0.52	0.65	0.69	0.70	0.71	0.64	0.59	0.57	0.42	0.16	0.00		
Toronto	0.00	0.07	0.58	0.65	0.73	0.71	0.76	0.74	0.74	0.68	0.58	0.54	0.34	0.02		
Lindsay	0.01	0.25	0.46	0.57	0.55	0.65	0.65	0.55	0.54	0.57	0.43	0.40	0.40	0.12		
Barrie	0.00	0.22	0.41	0.54	0.59	0.62	0.65	0.66	0.65	0.64	0.60	0.58	0.20	0.00		
Kingston	0.00	0.02	0.46	0.60	0.64	0.63	0.69	0.74	0.74	0.73	0.60	0.40	0.01	0.00		
Ottawa	0.00	0.09	0.34	0.42	0.51	0.59	0.59	0.60	0.61	0.57	0.54	0.46	0.17	0.00		
Montreal	0.00	0.18	0.41	0.52	0.54	0.60	0.60	0.65	0.53	0.53	0.55	0.33	0.00	0.00		
Fredericton	0.24	0.37	0.38	0.52	0.58	0.61	0.68	0.66	0.67	0.62	0.59	0.37	0.04	0.00		
	Victoria.	Kuper Island.	Agassiz.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Durham.	Woodstock.	Toronto.	Lindsay.	Barrie.	Kingston.	Ottawa.	Montreal.	Fredericton.
Mean proportion for month (Constant sunshine being 1)	0.54	0.52	0.36	0.45	0.37	0.43	0.42	0.55	0.49	0.57	0.49	0.51	0.47	0.44	0.51	0.50
Difference from average	0.11	0.06	0.06	0.05	0.05	0.06	0.05	—	0.00	0.01	0.04	0.03	0.03	—	0.03	0.02
Maximum daily amount	0.90	0.92	0.73	0.87	0.75	0.88	0.82	0.90	0.84	0.89	0.98	0.84	0.85	0.87	0.96	0.93
Date	2	24	25	19	16	20	21	30	18	28	14	18	18	18	7	18
No. of days completely clouded	3	1	7	5	7	8	7	6	2	1	2	1	2	8	5	3

## FORECASTS FOR SEPTEMBER, 1900.

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraphic station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 981. These were divided as follows:

DISTRICT.	No. Issued.	VERIFIED.			
		No. Fully	No. Partly	No. Not	Percentage
MANITOBA .....	83	60	14	9	85
LAKE SUPERIOR .....	104	84	12	8	87
LOWER LAKE REGION .....	115	98	10	7	88
GEORGIAN BAY.....	115	99	7	9	86
OTTAWA VALLEY.....	101	87	8	6	88
UPPER ST. LAWRENCE .....	104	80	8	16	84
LOWER ST. LAWRENCE.....	114	93	10	11	85
GULF .....	121	98	14	9	87
MARITIME PROVINCES .....	121	98	13	10	84
TOTAL .....	981	805	95	81	87

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

Meteorological Office, Toronto,  
26th October, 1900.

R. F. STUPART,  
*Director.*

MONTHLY and Annual Summaries, August 1899 to July 1900, inclusive, at Belle Isle, Newfoundland, Latitude, N. 54° 33'; Longitude, W. 55° 22'. Height above Sea, 436 feet.

MONTH.	PRECIP.			TEMPERATURE.						RELATIVE HUMIDITY.			PRESSURE OF VAPOUR.			CLOUD-NESS.			RAINFALL.	
	Monthly Mean.			Extremes.			MEAN.			Extremes.			Mean.			Mean.			Total.	Maximum in any 24 hours.
	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.	Max.	Min.	Mean.		
1900.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	29.79	30.56	28.96	41.6	12.7	13.1	18.2	6.0	12.4	36.0	13.0	...	...	...	...	76.85	80.80	78.82	2.19	1.06
February	30.02	30.62	29.29	46.5	18.2	16.4	20.6	4.3	16.9	36.0	11.0	...	...	...	...	70.63	56.63	63.63	0.08	0.06
March	29.95	30.52	29.28	20.4	21.5	20.6	24.6	16.4	20.6	37.0	17.0	...	...	...	...	74.78	73.75	74.27	2.54	1.16
April	29.86	30.56	29.05	27.6	29.2	26.9	31.2	24.3	27.7	39.0	13.0	...	...	...	...	73.74	71.73	72.74	6.35	2.60
May	30.04	30.52	29.38	36.8	38.4	36.0	39.0	33.3	36.3	47.0	29.0	...	...	...	...	64.60	56.60	60.60	0.59	0.30
June	29.88	30.52	29.32	45.3	47.7	44.9	49.6	42.8	46.2	59.0	38.0	...	...	...	...	63.60	51.58	57.59	3.57	1.04
July	29.95	30.39	29.68	49.2	50.4	47.8	51.8	45.9	48.8	60.0	36.0	...	...	...	...	77.73	78.76	78.25	9.23	2.60
1899.																				
August	30.16	30.52	29.79	53.8	54.6	52.9	57.8	51.2	54.5	64.0	43.0	...	...	...	...	78.65	60.68	69.67	3.70	1.38
September	29.97	30.47	29.29	51.3	52.4	50.7	55.1	49.7	52.5	59.0	48.0	...	...	...	...	66.63	64.64	65.64	3.08	1.08
October	30.01	30.46	29.29	39.7	40.5	39.0	42.7	37.3	40.0	52.0	17.0	...	...	...	...	74.72	68.71	71.72	10.04	1.90
November	29.89	30.46	29.27	24.8	26.3	23.9	27.9	24.6	26.3	39.0	14.0	...	...	...	...	72.72	67.70	69.71	0.48	0.18
December	29.92	30.52	29.15	22.4	22.4	20.9	25.6	18.4	22.0	37.0	3.0	...	...	...	...	68.60	56.61	62.61	6.66	1.38
Year...	29.95	30.62	28.96	33.3	34.5	32.8	...	...	...	33.5	64.0	17.0	...	...	...	74.69	63.68	69.69	48.21	2.60

MONTH.	NUMBER OF WINDS FROM									Average hourly Velocity.	Maximum daily Velocity.	Direction at time of maximum velocity.	No. of Gales.	NUMBER OF DAYS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
														Clear.	Partly clear.	C'dy.	Precip. 01 in. or over.	Snow.	Hail.	Fair.	Fog.	Thunder storms.	Lightning alone.	Auroras.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

OCTOBER, 1900.

No. 10

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of October was characterized by exceedingly high mean temperatures and much cloud and fog throughout the greater portion of the country, also excessive precipitation in the Maritime Provinces; the exceptions to these conditions being chiefly in portions of British Columbia and the North-west Territories. Comparatively little snow and few hard frosts were reported and only two or three storms of importance were recorded. In most districts trees and shrubs were not defoliated until an unusually late date and in some instances the leaves were quite green on the 31st, this being more especially the case in the eastern portion of the country. The departure of migratory birds was also much delayed.

In British Columbia the weather was fine and mild up to the 13th, after which it became unsettled and several gales occurred; altogether it did not differ much from the normal. Frosts occurred in many districts, but near the coast they were recorded only at a few places. Although snow was visible on the mountain tops at an early date the ground on lower levels was quite bare throughout the month. Some trees were still quite green on the 31st.

The weather in the North-west Territories varied, —in Alberta, it was cool and wet; in Saskatchewan, it was mild and wet; and in Assinaboia, with a few exceptions, it was mild and dry. During the first week some heavy falls of rain and snow were reported after which it became more settled, and in some districts comparatively fine weather prevailed to the end of the month. At most stations the maximum temperature exceeded 70°. Sharp frosts occurred nearly every night in northern districts, and they were quite frequent at southern stations. Trees were quite defoliated early in the month.

In Manitoba the weather conditions were somewhat similar to the conditions in Assinaboia. Fine, dry and exceedingly mild weather prevailing after the first week, the mean temperature being considerably above average, and the proportion of bright sunshine large, whilst the precipitation of the month was somewhat below average. Maximum temperatures from 70° and 75° occurred in most districts and minimum temperatures between 20° and 25° were almost general. Frequent calms with fog were recorded, and there were few high winds. Migratory birds had nearly all disappeared, and trees were quite bare by the 15th.

In Ontario the weather was almost all that could be desired, it being extremely fine mild and dry throughout the month. Both the temperature and proportion of bright sunshine were well above average whilst the precipitation was below. Many calms with fogs were reported, these fogs occurring mostly at night. Maximum temperatures between 80° and 90° occurred at most places on or about the 6th. Frosts were general, and the minimum temperatures which occurred in nearly all districts on or about the 17th, were between 20° and 30°. Although most trees and shrubs were defoliated by the 31st in northern districts, some were quite green in the southern portion of the Province, and many migratory birds were still to be seen in the woods.

The weather in the Province of Quebec was exceptionally fine, mild and dry the mean temperature being considerably above average, and the precipitation below whilst the number of fair days was unusually large. At Quebec the temperature reached 60° on fourteen days, maximum temperatures exceeding 70° occurring at several places and frost occurring much less frequently than usual. Heavy storms were reported on or about the 5th, the wind at Quebec reaching a velocity of 50 miles per hour on that date, but with this and a few other exceptions the winds were light or moderate. Fogs were unusually frequent. Some trees still retained their leaves on the 31st, and at Richmond, a few buttercups, dandelions and violets were in bloom, and strawberries blossomed for the second time.

In New Brunswick the weather was exceedingly mild, but it was exceptionally cloudy and wet, the temperature and precipitation being above average, and the proportion of bright sunshine below. The rainfall from the 9th to 11th was quite phenomenal, from eight to eleven inches being recorded at some places and causing much damage by flooding. Severe gales occurred on the 12th and 17th, the latter storm being accompanied by snow when several shipping disasters were reported. Maximum temperatures between 70 and 80 were recorded generally, and after the 17th frosts occurred upon several days; nevertheless, some trees were still quite green on the 31st.

The weather in Nova Scotia was unusually mild, the mean temperature being above average, and during the first half of the month it was exceedingly cloudy and wet. From the 21st to the 27th the weather was exceptionally fine and bright in most districts. Gales occurred on the 11th, 17th and 30th, that on the 11th being exceedingly severe. Maximum temperatures reported were generally 70 and 80. Frosts occurred in most districts, but at a few places the temperature did not reach the freezing point. Many trees in southern districts still retained their leaves on the 31st.

In Prince Edward Island the weather conditions were very similar to those in New Brunswick, it being generally milder than usual, but exceedingly wet, there being little fine weather excepting during the first few and last few days of the month. The maximum temperatures reported did not exceed 60°, and the nights were often quite cold, frost occurring upon several occasions.—F. F. PAYNE.

#### ATMOSPHERIC PRESSURE

The mean atmospheric pressure was below average from our Pacific Coast east to the western half of Lake Superior, and above average elsewhere in the Dominion. The greatest negative departures occurred in British Columbia and Northern Alberta, and amounted to from .15 to .16 of an inch, and the greatest positive departures occurred in Quebec and the northern portion of the Maritime Provinces, and were also from .15 to .16 of an inch.

#### HIGH AREAS.

The pronounced character of the High Areas was a distinctive feature of the month, and it may be observed that in nearly all instances the importance of the areas was decidedly increased as they approached the more eastern portions of Canada and the United States. Of the eight areas tracked, only Nos. 5 and 6, about the middle of the month, were accompanied by heavy frosts in Canada from Ontario to Nova Scotia. No. 5 passed southeast from the North-west Territories to the Middle Atlantic Coast, and No. 6 passed from Manitoba to the northward of the Lake Region and then south-eastward.

#### LOW AREAS.

The low areas over the Continent during October were few in number and generally slow and erratic in movement; only two of them can be classed as important, one of which was a West India hurricane, and the other an area which developed remarkable energy near our eastern coasts. No. 1 was a small depression which passed northward near the Pacific Coast. No. 2 probably originated near the Pacific Coast; it was centered in the Upper Missouri Valley early on the 6th, and thence passed north-eastward across Lake Superior, there accompanied by moderate gales and rain; it then passed eastward and rain was pretty general in Ontario on the 7th, and in Quebec and the Maritime Provinces on the 8th. No. 3 is shown by the Pilot Chart published by the U. S. Hydrographic Office, to have been a West India hurricane, the centre of which passed just west of Bermuda on the 9th, and across Nova Scotia during the night of the 11th. A remarkable feature of the weather accompanying this storm was the exceedingly heavy rainfall in the Maritime Provinces and especially in southern New Brunswick, where from seven to ten inches of rain fell in less than three days. In the Gulf of St. Lawrence and in eastern Nova Scotia during the same time, there were very severe north-east and east gales. No. 4 was a comparatively shallow depression which may be traced from Florida to the Maritime Provinces between the 11th and 15th, and No. 5 was another shallow depression which passed from the Northwest Territories to the Gulf of St. Lawrence during the same interval. In about the same region where these two depressions seem to have coalesced, there was a very marked cyclonic development during the night of the 15th, and on the 16th there was a rainfall followed by a cold northerly gale in the St. Lawrence Valley, and a similar sequence in the Maritime Provinces on the following day as the storm centre passed from our coasts. No. 6 was a fairly deep depression in the Western States and passed eastward from Lake Superior with diminishing energy; it gave heavy local rains in Ontario and Quebec during the 23rd and 24th. Other shallow depressions there were, especially over the western part of the Continent; but erratic movements and the difficulty of locating the positions of their centres makes it impossible to trace them.

#### TEMPERATURE.

The mean temperature of the month was above average in all parts of the Dominion except in the mainland of British Columbia, Alberta and the extreme western portion of Assiniboia. In Ontario the departure from normal ranged between 8 and 12 degrees, an amount which, judging by the Toronto record, has

not been exceeded in 60 years. In Quebec and the Maritime Provinces the positive departure from normal was also large, ranging from about seven degrees in the Eastern Townships and portions of Nova Scotia, to 3 or 4 degrees in the Gaspé Peninsula, Prince Edward Island and Cape Breton. In Manitoba, also, the mean temperature was unusually high, averaging about 7 degrees above normal; but further west the difference became gradually less, and at Calgary a negative departure of 3 degrees was registered. The monthly range of temperature was large, and particularly so in Ontario, in which province maxima of over 50 degrees were recorded in nearly all localities about the 4th and 6th, and sharp frosts occurred very generally on or about the 16th and 18th. The absolutely highest temperature so far reported was 90 degrees at Stouffville, Cottam and Alton, Ontario, on the 5th and 7th, and the lowest reported was 4 degrees at Calgary Experimental Station on the 6th.

*The Highest and Lowest Temperatures in each Province during October, 1900 were:*

British Columbia,	79.1 on 8th at Alberni	14.9 on 2nd at Barkerville.
North-west Territories,	78.0 on 9th at Muskowpetung.	4.2 on 6th at Calgary Exp. Station
Manitoba,	77.5 on 14th at Aweme.	20.0 on 24th at Barnardo.
Ontario,	90.2 on 7th at Alton.	15.0 on 20th at Bissett.
Quebec,	82.0 on 13th at Sherbrooke.	17.0 on 20th at Richmond.
New Brunswick,	78.9 on 4th at Chatham.	18.4 on 20th at St. Stephen.
Nova Scotia,	83.5 on 9th at Bridgetown.	22.0 on 21st at Truro.
Prince Edward Island,	69.1 on 1th at Charlottetown.	25.8 on 21st at Summerside.

#### PRECIPITATION.

A phenomenally heavy rainfall occurred in New Brunswick and western Nova Scotia between the 9th and 12th, when 10.29 inches fell at Grand Manan, 9.19 at Yarmouth, and 8.33 at Fredericton. In Eastern Nova Scotia the fall was not so excessive, and from the Bay of Fundy northward over New Brunswick the amount also lessened, and near the Quebec boundary the total fall of the month was only about average. In Quebec and Ontario there was a fairly general deficiency except very locally in some of the higher counties of the Ontario peninsula and in the Rainy River district. Reports from stations in Alberta and Saskatchewan indicate a fairly pronounced excess of rain, but in Manitoba and Assiniboia a deficiency was general and decided. Reports from British Columbia indicate a rainfall very generally above average. Heavy snowfalls occurred in the North-West Territories early in the month, and flurries were reported from some few stations in Ontario and the Maritime Provinces about the 17th.

#### WINDS.

In British Columbia the easterly direction was the most in evidence; the force of a fresh or strong breeze was seldom attained and that of a moderate gale was only once or twice reached. In the North-west Territories and Manitoba no one direction predominated. The first half of the month there was little wind mileage but during the latter half fresh or strong breezes were of frequent occurrence, and the force of a gale was reached on several occasions. In the Lake Region also no one direction prevailed; there were many days of light to moderate breezes, but on 1st, 6th, 22nd and 29th, the force of a moderate gale was attained; the gales on the 1st and the 22nd being confined to Lake Superior and that on the 6th being only experienced on Lake Superior and the Georgian Bay. In the St. Lawrence Valley and the Maritime Provinces the wind direction was also variable, and the mileage was not as a rule large; however, the force of a gale was reached on the 6th at some few places in the Gulf of St. Lawrence, and generally in the Gulf of St. Lawrence and the Maritime Provinces on the 9th, 16th and 29th. The moderate gale which prevailed in the Lake Region on the 16th, was not warned, but all the other gales that occurred were amply and successfully warned in the respective districts in which they occurred.

#### BRIGHT SUNSHINE.

The bright sunshine registered was in excess of the average in Manitoba, Ontario and Quebec and less than average in British Columbia and the North-west Territories and in the Maritime Provinces. The highest percentage of possible duration registered was 53 per cent at Montreal, closely approached by 51 per cent at Kingston and 50 at Toronto, these amounts being respectively 11, 11 and 8 per cent above average. The smallest percentages reported were 22 at Agassiz, 21 at Victoria, B.C., and 30 at Indian Head, N.W.T., respectively 7, 4 and 5 per cent of the possible below average.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, OCTOBER, 1900.

• Stations not furnished with Registering Thermometers

STATION.			PRESSURE.			TEMPERATURE.			DIRECTION OF WIND FROM.						VELOCITY OF WIND.			PRECIPITATION.			No. of days with 1/4 or more in. of rain.			No. of days with 1/4 or more in. of rain.		
Latitude N.	Longitude W.	Elevation above sea level, in feet.	Mean reduced.		Mean.	Difference.		Mean daily.	Mean relative humidity.	Mean amount of cloud.	N. E. S. W.			Mean miles per hour.	Highest days velocity.	Date and direction from.	Amount.	Rain from gauge.	No. of days.	No. of days.	No. of days.	No. of days.	No. of days.	No. of days.		
			Highest.	Lowest.		Range.	Range.				Range.	Range.	Range.												Range.	
BRITISH COLUMBIA:																										
48 21 23	123 35	58	29.50	32.29	30.40	0.9	9.54	6	9.9	10	55	120	102	63	21.5	27.8	1.48	1.48	0.4	0.4	0.4	0.4	0.4	0.4		
48 21 23	123 35	58	29.50	32.29	30.40	0.9	9.54	6	9.9	10	55	120	102	63	21.5	27.8	1.48	1.48	0.4	0.4	0.4	0.4	0.4	0.4		
48 21 23	123 35	58	29.50	32.29	30.40	0.9	9.54	6	9.9	10	55	120	102	63	21.5	27.8	1.48	1.48	0.4	0.4	0.4	0.4	0.4	0.4		
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48 21 2																										









PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING  
OCTOBER, 1900.

RAINFALL.					SNOWFALL.					REMARKS.
STATIONS.	Amount in inches.	No. of Days of or Over	No. of Fair Days.	Heaviest Fall in Month.	Date	Amount in inches.	No. of Days.	Heaviest Fall in Month.	Date.	
BRITISH COLUMBIA—										
Vancouver .....	9.27	20	11	2.43	25	.....	.....	.....	.....	
Nanaimo .....	4.39	13	18	1.65	21	.....	.....	.....	.....	
Cannfield .....	6.93	22	8	1.48	25	.....	.....	.....	.....	
Goldstream Lake .....	8.93	20	11	1.71	25	.....	.....	.....	.....	
Royal Oak .....	1.48	19	12	0.90	29	.....	.....	.....	.....	
Cumberland .....	9.88	18	13	2.45	27	.....	.....	.....	.....	
Port Essington .....	16.40	25	6	1.90	27	.....	.....	.....	.....	
Nass Harbour .....	12.53	20	11	1.62	7	.....	.....	.....	.....	
N. W. TERRITORIES—										
Cochrane .....	0.44	1	24	0.44	19	10.0	6	9.0	1	
Crescent Lake .....	0.64	6	25	0.29	6	.....	.....	.....	6	
Sterling .....	0.15	1	.....	0.15	5	6.0	6	.....	.....	
Saltcoats .....	0.15	1	26	1.39	5	6.5	3	6.0	1	
Rouleau .....	R	.....	25	R	13	10.5	5	6.0	1	
W. Beaver Hills .....	0.96	4	25	0.48	22	8.5	4	8.0	3	
Starbuck .....	6.43	5	22	0.65	22	6.4	7	7.0	3 4	Aurora 23rd, 24th, 25.
Conits .....	0.29	1	27	0.39	3	9.3	4	6.0	5	
Regina .....	0.84	8	22	0.20	3	.....	.....	.....	.....	Snow included in rain.
Weyburn .....	.....	.....	.....	.....	.....	15.4	5	8.0	1	
Dudbury .....	.....	.....	.....	.....	.....	6.7	4	5.0	4	
MANITOBA—										
Clearspring .....	1.28	7	25	6.84	10	.....	.....	.....	.....	Thunder 4th, 5th, 20th.
Oakbank .....	0.72	5	23	0.45	4	.....	.....	.....	.....	Thunder on 5th.
Beaver .....	0.28	3	28	0.47	1	.....	.....	.....	.....	
Setkirk .....	0.87	6	25	0.25	29	.....	.....	.....	.....	Thunder on 5th.
St. John .....	0.89	12	19	0.35	24	.....	.....	.....	.....	Thunder on 22nd.
Rapids .....	0.93	3	23	0.76	30	.....	.....	.....	.....	
Rapid City .....	0.35	2	25	0.25	1	.....	.....	.....	.....	Thunder on 25th, Aurora 22nd,
Pembina Crossing .....	0.95	8	23	0.35	30	.....	.....	.....	.....	[23rd, 25th, 26th.
Hartney .....	2.90	7	24	1.25	30	.....	.....	.....	.....	
Cartwright .....	1.20	5	25	0.59	24	.....	.....	.....	.....	
Belmont .....	0.29	6	23	0.44	1	.....	.....	.....	.....	
Norquay .....	0.47	3	23	.....	.....	.....	.....	.....	.....	
Morden .....	1.21	7	23	0.44	30	.....	.....	.....	.....	
Bowman .....	0.77	2	29	0.34	1	.....	.....	.....	.....	
Oak Lake .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
ONTARIO—										
Princeton .....	2.72	4	27	1.04	22 23	.....	.....	.....	.....	
Lion's Head .....	2.89	6	25	1.17	29	.....	.....	.....	.....	
Ursa .....	3.08	10	21	1.01	7	.....	.....	.....	.....	1st Snow on 15th, Thunder 26th.
Huntsville .....	3.26	6	29	1.05	1	.....	.....	.....	.....	Aurora 24th.
Elgin .....	1.86	6	25	0.63	22	.....	.....	.....	.....	
Providence Bay .....	2.36	7	24	0.65	7	.....	.....	.....	.....	Thunder 4th, 16th, 26th.
Port Burwell .....	1.80	6	25	0.85	22 23	.....	.....	.....	.....	Thunder 6th.
Croydon .....	2.25	4	27	0.99	7	.....	.....	.....	.....	
Smith Falls .....	2.20	8	23	0.54	7	.....	.....	.....	.....	
Uxbridge .....	2.07	7	24	0.59	26	.....	.....	.....	.....	
N. Williamsburg .....	3.13	3	28	1.15	8	.....	.....	.....	.....	
Wooler .....	2.14	7	24	0.58	23	.....	.....	.....	.....	Thunder 4th, 5th, 16th.
Aurora .....	3.32	8	23	1.02	7	.....	.....	.....	.....	
Warton .....	3.28	6	25	0.83	29	.....	.....	.....	.....	Thunder 26th.
Goderich .....	2.03	7	24	0.80	29	.....	.....	.....	.....	
Watford .....	1.85	5	26	0.70	22	.....	.....	.....	.....	
Parma .....	2.64	5	26	0.89	8	.....	.....	.....	.....	
Lansdowne .....	2.20	10	21	0.70	31	.....	.....	.....	.....	
Emsdale .....	2.23	8	23	0.62	23	.....	.....	.....	.....	16th First Snow, Thunder 26th.
Georgetown .....	3.14	8	24	1.15	30	.....	.....	.....	.....	Thunder 7th, 26th. [Aurora 24th
Midland .....	3.29	7	24	0.82	26	.....	.....	.....	.....	Thunder 5th, 26th.
Nottawasaga Island .....	3.20	9	22	0.80	28	.....	.....	.....	.....	
Dutton .....	2.22	4	27	1.12	22	.....	.....	.....	.....	
Jermyn .....	1.91	5	26	0.70	23	.....	.....	.....	.....	Thunder 26th.
Cayuga .....	1.02	6	24	0.32	7	.....	.....	.....	.....	
Orangeville .....	2.70	9	22	1.39	30	.....	.....	.....	.....	
Arden .....	1.81	10	21	0.65	8	.....	.....	.....	.....	Thunder 8th, First Snow 17th.
Wyoming .....	1.80	5	26	0.65	30	.....	.....	.....	.....	Thunder 30th.
Kitley .....	2.26	8	23	0.73	8	.....	.....	.....	.....	Thunder 26th.
Montague .....	2.52	5	26	0.71	7	.....	.....	.....	.....	
Scarboro .....	1.93	4	26	0.84	3 4	.....	.....	.....	.....	Thunder 6th, 26th.
Oliver's Ferry .....	2.68	7	24	1.50	8	.....	.....	.....	.....	
Wilton Grove .....	2.59	6	25	1.51	22 23	.....	.....	.....	.....	Thunder 16th.
Sunshine .....	3.41	6	25	1.53	30	.....	.....	.....	.....	
Dealtown .....	1.93	7	24	1.10	22 23	.....	.....	.....	.....	
Listowel .....	1.28	5	26	1.56	30	.....	.....	.....	.....	
Peel Park .....	2.02	7	24	0.97	30	.....	.....	.....	.....	
Ennismore .....	0.82	3	27	0.49	22	.....	.....	.....	.....	
NEW BRUNSWICK—										
Point Escuminac, ....	4.43	12	19	2.65	10 12	.....	2	.....	.....	
NOVA SCOTIA—										
Port Morien .....	8.60	5	26	3.09	12 13	.....	.....	.....	.....	
P. E. ISLAND—										
Murray River .....	6.50	12	19	3.28	10	.....	.....	.....	.....	

*Thunder reported at—*

1. Grillin Lake.
3. Sturgeon Falls.
4. Chicoutimi, Sturgeon Falls, Rat Portage, Cockburn Island, Bancroft, Uplands, Clear Spring, Providence Bay, Durham, Quebec, White River, Father Point, Haileybury.
5. Brome, Rat Portage, Bloomfield, Montreal, Selkirk, Wooder, Truro.
6. Searboro, Port Arthur, White River.
7. Deseronto, Lindsay, Bermuda, Toronto, Agincourt, Hamilton, Bloomfield, Beatrice, Bancroft, Uplands, Stouffville, Clontarf, Port Burwell, Emsdale, Georgetown, Midland, Arden, Coldwater, Gravenhurst, Calvin.
9. Bermuda.
16. Port Hastings, Sherbrooke, Brome, Providence Bay, Sunshine.
18. Summerside, Parrsboro, Truro.
19. Battleford.
20. Clearspring.
22. Uplands.
25. Rossland.
26. Sturgeon Falls, Meaford, Port Hope, Agincourt, Kinnmount, Stony Creek, Bloomfield, Erasmus, Beatrice, Bancroft, Haliburton, Welland, Owen Sound, Lucknow, Uplands, Bala, Collingwood, Ursa, *see*, Providence Bay, Warton, Emsdale, Georgetown, Midland, Jermyn, Kitley, Searboro, Rossland, Gravenhurst, Deseronto, Lindsay, Durham, Saugeen, Toronto, Guelph, Calvin.
27. Kinnmount.
28. Kinnmount.
30. Wyoming.

*Aurora Recorded:—*

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV) the feeblest in brilliancy.

10. Chicoutimi.
11. Chicoutimi.
12. Chicoutimi.
15. Barnardo IV.
16. Swift Current III, Red Deer IV.
19. Aweme III.
20. Swift Current III.
22. Pembina Crossing IV, Moose Jaw.
23. Strathcona III, Pembina Crossing IV, Hillview II, Aweme III, Red Deer IV.
24. Huntsville IV, Emsdale III, Strathcona III, Athabasca Landing, Moose Jaw, Aweme II, Chicoutimi, Swift Current IV, Quebec IV, Prince Albert II, Medicine Hat IV, Haileyburg III, Calvin, Onikup, Red Deer III.
25. Strathcona IV, Pembina Crossing IV, Hillview IV, Athabasca Landing, Aweme III, Clontarf IV, Haileybury III, Sturgeon Falls, Bloomfield, Chicoutimi, Gravenhurst IV, Barnardo III, Truro IV, St. Anne de la Pocatière, Minnedosa III, Quebec IV, Father Point III, Red Deer I.
26. Pembina Crossing IV, Athabasca Landing, Minnedosa III, Prince Albert I, Alton, Onikup, Red Deer II.
27. Athabasca Landing, Barnardo II, Onikup.
28. Athabasca Landing.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE  
SUN WAS ABOVE THE HORIZON IN THE MONTH OF OCTOBER 1966

	Hours in 1966															
	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.
Victoria			0.00	0.09	0.33	0.46	0.58	0.49	0.36	0.36	0.32	0.31	0.25	0.07		
Kuper Island			0.00	0.05	0.35	0.44	0.46	0.47	0.47	0.44	0.39	0.37	0.26	0.06		
Agassiz			0.00	0.01	0.16	0.30	0.29	0.27	0.36	0.33	0.29	0.28	0.08	0.00		
Battleford			0.00	0.17	0.45	0.47	0.51	0.52	0.51	0.49	0.46	0.34	0.22	0.02		
Indian Head			0.00	0.00	0.12	0.31	0.44	0.58	0.51	0.55	0.49	0.25	0.02	0.00		
Brandon			0.20	0.45	0.52	0.51	0.52	0.46	0.45	0.45	0.40	0.15	0.00	0.00		
Winnipeg			0.26	0.36	0.43	0.47	0.45	0.49	0.57	0.53	0.43	0.19	0.00			
Durham			0.03	0.20	0.49	0.55	0.56	0.58	0.59	0.52	0.47	0.47	0.45	0.21		
Woodstock			0.00	0.13	0.40	0.61	0.64	0.63	0.65	0.66	0.66	0.57	0.33	0.03		
Toronto			0.00	0.20	0.40	0.56	0.65	0.68	0.71	0.65	0.59	0.59	0.43	0.04		
Lindsay			0.06	0.25	0.43	0.50	0.59	0.63	0.58	0.58	0.57	0.50	0.48	0.15		
Barrie			0.01	0.32	0.40	0.45	0.51	0.60	0.61	0.58	0.55	0.56	0.25	0.00		
Kingston			0.00	0.31	0.63	0.62	0.63	0.64	0.64	0.62	0.60	0.55	0.29	0.00		
Ottawa			0.00	0.21	0.38	0.38	0.56	0.60	0.61	0.55	0.64	0.58	0.31	0.01		
Montreal			0.02	0.32	0.51	0.65	0.65	0.68	0.62	0.60	0.60	0.31	0.04	0.00		
Fredricton			0.12	0.26	0.38	0.45	0.48	0.50	0.56	0.55	0.51	0.42	0.07	0.00		
Mean proportion for month (Constant sunshine being 1)	0.31	0.34	0.22	0.38	0.50	0.58	0.59	0.47	0.48	0.50	0.48	0.43	0.51	0.44	0.53	0.39
Difference from average	0.04	0.02	0.07	0.06	0.05	0.03	0.03	0.05	0.09	0.08	0.08	0.09	0.11	0.11	0.11	0.05
Maximum daily amount	0.87	0.88	0.79	0.90	0.65	0.87	0.92	0.98	0.93	0.91	0.96	0.90	0.88	0.89	0.97	0.94
Date	28	2	10	26	24	21	22	16	20	19	19	17	10	25	15	25
No. of days completely clouded	8	10	14	5	10	10	6	10	5	1	6	6	1	5	4	8

## FORECASTS FOR OCTOBER, 1900.

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1034. These were divided as follows:

DISTRICT.	No. Issued.	VERIFIED.			
		No. Fully	No. Partly	No. Not	Percentage
MANITOBA .....	84	75	8	1	88.8
LAKE SUPERIOR .....	108	98	7	3	91.0
LOWER LAKE REGION .....	128	117	—	—	91.8
GEORGIAN BAY .....	127	113	9	5	91.4
OTTAWA VALLEY .....	119	103	14	2	92.4
UPPER ST. LAWRENCE .....	118	104	11	3	91.5
LOWER ST. LAWRENCE .....	107	85	20	12	84.7
GULF .....	113	95	8	10	87.6
MARITIME PROVINCES .....	127	108	12	7	85.2
<b>TOTAL .....</b>	<b>1034</b>	<b>891</b>	<b>85</b>	<b>58</b>	<b>85.7</b>

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. E. STUPART,

*Director.*

Meteorological Office, Toronto.

26th November, 1900.





# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

NOVEMBER, 1900.

No. 11

### INTRODUCTION.

In compiling the present Review the principal data made use of are the monthly report of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The weather of November was characterized by abnormally low mean temperature throughout Manitoba, the North-west Territories and the eastern portion of British Columbia whilst on the contrary it was above average in Ontario and throughout the greater portion of Quebec and Maritime Provinces. In the eastern portion of the country precipitation was unusually heavy and was chiefly snow whilst in the provinces to the westward with few exceptions the precipitation differed little from the average. In many districts after some severe weather during portions of the second and third week fine milder weather set in and in more eastern provinces a few wild flowers were still in bloom on the 30th.

In British Columbia the weather did not differ much from average, it was however somewhat cooler and dryer than usual whilst the proportion of bright sunshine was unusually large. After the 15th, the weather became much more wintry than during the first half of the month, the temperature falling below zero over the Upper Mainland, snow falling rather frequently, and high winds being reported. Farming operations in many districts were continued to the 15th.

The weather in the North-west Territories during the first twelve days with a few exceptions was comparatively mild, after which there was a cold period lasting to the 24th, when higher temperatures again prevailed. Altogether the temperature was below average whilst the precipitation, which was almost wholly snow, varied considerably in amount at the different stations. At Battleford the Saskatchewan River froze over on the 11th, and horses crossed on the ice two days later. In the more south western portion of the Territories the prairies were bare on the 30th, but elsewhere there was a good covering of snow, a depth of 20 inches being reported from Qu Appelle.

In Manitoba the sequence of weather was very similar to that in the Territories and the mean temperature was also below average. The precipitation which was mostly snow was generally above average whilst the proportion of bright sunshine was somewhat below. At Brandon the river was frozen over on the 13th, and by the 30th the ice was eight inches thick. Sleighing was general after the 17th.

The weather in Ontario was unusually mild and wet, both the mean temperature and precipitation being above average. The proportion of bright sunshine was also above average excepting in more eastern and north-eastern districts where it was below. Snow fell upon several days during the month and in northern and eastern counties it covered the ground by the 30th to a depth of several inches, but was rapidly melting. A severe storm passed over the province on the 21st, and there was a heavy northerly gale on lakes Erie and Ontario on the 25th and 26th; several gales of less severity were also reported. A few migratory birds were still to be seen in sheltered places on the 30th, when several different plants in bloom were also noted in southern districts.

In western Quebec the weather was unusually wet and the temperature was somewhat higher than in Manitoba whilst in eastern districts the precipitation was comparatively light and the temperature slightly below average. Temperature below zero occurred at several places on the 16th and 28th, and at two stations the temperature exceeded 60° namely Richmond on the 2nd and Brome on the 21st.

In New Brunswick the weather was unusually mild, stormy and wet, the temperature and precipitation being above average and storms heavy and frequent.

The most severe gale occurred on the 9th and 10th when the maximum velocity of the wind was 60 miles an hour, causing much loss of life and destruction to property. The St. John river was frozen to a depth of three inches at Fredericton on the 30th, and in the interior of the province there was good sleighing by the same date.

The weather in Nova Scotia was exceptionally mild and wet, both the temperature and precipitation being above average; it was also unusually stormy, severe gales occurring on the 8th, 10th, 21st, and 28th. In most districts clouded skies were unusually frequent and there were few quite fine days. At Halifax the sea in the North-west Arm or bay was frozen over on the 30th.

In Prince Edward Island the weather was very similar to the weather in New Brunswick it being mild and wet in most districts. The first heavy snow and severe frost occurred on the 15th at Charlottetown and although bays and rivers were free of ice on the 30th, the ground was partly covered with snow at that date and presented quite a wintry appearance. — E. E. Payne.

#### ATMOSPHERIC PRESSURE.

The pressure was between  $\pm 10$  and  $\pm 14$  of an inch higher than the average in Manitoba and the larger portion of the North-west Territories. Eastward from Manitoba the positive departure gradually lessened until near lake Huron it was zero, and in eastern Ontario, Quebec and the Maritime Provinces negative departures ranging from  $\pm 02$  to  $\pm 05$  of an inch were general. The largest differences reported were  $\pm 14$  at Medicine Hat and Minnedosa, and  $\pm 05$  at Kingston and Sydney.

#### HIGH AREAS.

Eight areas of high pressure were sufficiently well marked to be charted, their general course being over the North-West Territories and thence southward and south-eastward.

For the first six days of the month high pressure covered the greater portion of the continent but there was no defined movement of any system. No. 1 was an area of moderate energy which developed over the North Saskatchewan Valley and Manitoba between the 6th and 7th and thence moved southward to the Lower Mississippi Valley where it became unimportant. It was accompanied by sharp freezing weather over the greater part of its course. No. 2 covered northern British Columbia on the 9th as a decidedly important area: on the 10th it moved over the western portion of the North-West Territories accompanied by fairly cold weather and then passed directly southward to Texas where it dispersed. No. 3 was of very moderate energy and between the 12th and 14th travelled from British Columbia across the North-West Territories and thence south eastward to Tennessee. It was attended by low temperatures, readings below zero occurring in many portions of the Territories and Manitoba. No. 4 was of considerable importance: on the 14th and first part of the 15th it covered the North-West Territories attended by zero weather, and this cold wave in a modified form spread to Ontario, Quebec and the Maritime Provinces. The main system after leaving the Territories passed to the southward of the Lake Region and on the 17th was off the coast of New Jersey. No. 5 moved slowly over the Territories and Manitoba between the 16th and 18th accompanied by temperature ranging from zero to  $16^\circ$  below. It then divided into two portions: one passed with great rapidity far north over Canada to the Gulf of St. Lawrence while the other after hovering over Alberta until the 20th, travelled with diminishing energy south-eastward to the South Atlantic States. No. 6 lay over the North-west on the 22nd and for several days afterwards, attended by decidedly cold weather the temperature falling to  $20^\circ$  and  $28^\circ$  below zero in many localities. Like its predecessors this area divided into two parts, one passed far north of the Lake Region to the Lower St. Lawrence and the Maritime Provinces the other almost directly southward to Texas and the Gulf States. No. 7 was a very moderate area which travelled between the 27th and 29th from the northward over the Lower St. Lawrence Valley and the Maritime Provinces. No. 8 was an offshoot of a widespread system which covered the Pacific States during the latter part of the month. By the night of the 30th it had reached the Central States and was centred near Tennessee.

#### LOW AREAS.

Eleven areas of low pressure were well marked during the month, and there were also several minor depressions that were too ill defined to be successfully charted. The following is a brief description of the marked depressions. No. 1 was situated over the northern portion of Lake Michigan on the morning of the 1st whence it passed eastward and reached the Gulf of St. Lawrence on the 2nd. It caused a moderate south-westerly gale over the Lakes together with some light showers. No. 2 travelled over British Columbia on the 2nd attended by rain and gales: on the 3rd it brought showers of rain and snow in the Territories and Manitoba and at night the winds increased to moderate gales on Lake Superior. It afterwards, in its easterly advance, caused some local showers in Ontario and Quebec together with moderate westerly gales on the lakes.

No. 3 passed from the Gulf of Mexico up the Gulf Stream and thence on the night of the 5th over the Maritime Provinces to the Gulf of St. Lawrence causing a general rain, the fall being very heavy in Cape Breton. No. 4 originated in the Lake Region and its vicinity, two small foci first appearing, the great development occurring when these foci united on the Jersey Coast and swept over the Maritime Provinces causing a very heavy gale from the lakes to the Atlantic. No. 5 was a very moderate area which travelled between the 8th and 11th from British Columbia to the Lower Lake Region and then lost its identity. It caused a few showers in British Columbia, and light local snowfalls elsewhere. No. 6 appeared in the North Saskatchewan Valley on the 11th. It travelled quickly over Canada and reached the Gulf of St. Lawrence on the 13th. In the Lake Region, it brought moderate westerly gales and in the Maritime Provinces a heavy rainfall, while in Northern Ontario and also in Quebec there was a light fall of snow in many localities. No. 7 was subsidiary to No. 6; it formed in Iowa, developed rapidly and travelled over the Lower Lake Region and south of the St. Lawrence River to the Gulf accompanied by moderate to fresh gales from the lakes to the Atlantic, together with a snowfall in Ontario and Quebec and showers in the Maritime Provinces. No. 8 formed in the Mississippi Valley on the 20th in an existing widespread trough. It developed rapidly and passed over the Lake Region and down the St. Lawrence Valley to the Gulf accompanied by very heavy gales and rain which latter turned to snow in many northern localities. No. 9 travelled from the vicinity of New Mexico to the Gulf of St. Lawrence between the 21st and 23rd. It was a fairly energetic area and in Canada from Ontario to the Maritime Provinces it was attended by moderate to fresh gales and light falls of snow and rain. No. 10 developed in Texas on the 23rd and travelled as a disturbance of considerable importance over the Middle and New England States and then skirted the Nova Scotia Coast. It caused fresh to heavy gales from Ontario to the Maritime Provinces together with a heavy fall of snow in Quebec heavy snow and rain in the Maritime Provinces and moderate snowfalls in Ontario. No. 11 when over British Columbia between the 24th and 25th was very energetic attended by heavy rains and gales. It afterwards became greatly reduced in strength and eventually on the 29th completely dispersed in the Lower Lake Region.

#### WINDS.

In British Columbia, over the Lower Mainland and Vancouver Island, the winds were largely from an easterly and southerly direction and strong breezes and gales were of frequent occurrence; this was especially the case between the 15th and 25th. In the North-West Territories and Manitoba the westerly and northerly directions if anything predominated but they were not strikingly in evidence, fresh to strong breezes were of almost daily occurrence but the force of a gale was not often attained. From the Lake Region to our Atlantic Coast the month was characterized by a large preponderance of strong winds and gales. In the Lake Region the force of a gale was reached on the 1st, 5th, 7th, 12th, 16th, 20th, 22nd, and 25th. The gales of the 7th, 12th, 20th, and 25th, were of a heavy type. In the St. Lawrence Valley and the Maritime provinces gales occurred on the 7th, 12th, 21st, 23rd and 26th all being of a fresh to heavy type. During the gale of the 7th the S. S. 'Monticello' was wrecked in the Bay of Fundy and thirty three lives were lost, and during the gale of the 21st the S. S. 'St. Olaf' was wrecked at Seven Islands in the Gulf of St. Lawrence and all on board perished. All the storms of the month were well warned, on one or two occasions, however signals were displayed for storms which did not occur and in a few instances at sundry stations the gale exceeded the force indicated by the signal displayed and vice versa. The St. John Evening Gazette of the 22nd of December, 1900, prints the following unsolicited item. "Quite a large number of steamer captains make it their business to call at the St. John Observatory to ascertain the weather probabilities before going to sea. Mr. D. L. Hutchinson who is head of the Service in this city is ever ready to give the bulletin to all mariners. A number of ocean steamer captains called to see him today about the storm now centred off the Nova Scotia Coast and were told that the weather would be fine until to-morrow night. They went away satisfied. Had the warnings been heeded in the past some valuable property and lives would have been saved.

#### BRIGHT SUNSHINE.

Bright sunshine was above average to a considerable amount over British Columbia (a little above average in Ontario and slightly below in the North west Territories, Manitoba, Quebec and the Maritime Provinces. Victoria and Toronto registered the largest amounts 33 and 34 per cent respectively and Indian Head the smallest amount which was 19 per cent.

#### TEMPERATURE.

The mean temperature of the month was higher than the average by from 1 to 3 degrees in the more southern portions of Ontario and in Nova Scotia and about 1 above in nearly all parts of New Brunswick

and Quebec. Western Lake Superior the departure from average was negative by about 1° near the northern shore of Lake Huron and Superior about 2° to 4° in Manitoba, and by between 3° and 5° in Assiniboia and British Columbia. Vancouver Island was very nearly average. One of the most marked features of the month was the exceptionally severe cold which prevailed in the North-west Territories between the 13th and 25th, during which period the temperature fell below zero at nearly all points on nine days, at some few places on ten or eleven days.

*The Highest and Lowest Temperatures recorded in each Province during November, 1900 were:*

British Columbia,	65°·0 on 13th at Agassiz,	22°·4 on 21st at Tobacco Plains.
North-west Territory,	74°·2 on 1st at Knee Hill,	41°·5 on 20 at Knee Hill.
Manitoba,	52°·0 on 2nd at Portage La Prairie,	39°·0 on 22nd at Elkhorn.
Ontario,	72°·0 on 1st at Windsor,	18°·6 on 24th at White River.
Quebec,	66°·4 on 22nd at Sherbrooke,	5°·0 on 16th at Brome.
New Brunswick,	68°·0 on 2nd at Bathurst,	4°·0 on 29th at Chatham.
Nova Scotia,	69°·0 on 2nd at Port Hastings,	8°·0 on 17th at Truro.
Prince Edward Island,	62°·0 on 9th at Charlottetown,	17°·5 on 17th at Summerside.

#### PRECIPITATION AND DEPTH OF SNOW.

In Ontario, Quebec and the Maritime Provinces the precipitation was in excess of the average and chiefly in the form of rain; there were, however, several falls of snow in all districts, and in the St. Lawrence Valley there was a heavy north-east snow storm during the 25th and 26th.

In Manitoba Assiniboia and Southern Alberta the precipitation was almost wholly snow and varied between 8 and 16 inches; in Saskatchewan and Northern Alberta the fall was much less.

On the last days of the month the more south-western portions of the North-west prairies were bare, but a covering of from 5 to 10 inches was very general in Manitoba and over most of Assiniboia, and as much as 20 inches was reported from Qu'Appelle. The more eastern and northern portions of Ontario reported several inches on the ground, but rapidly disappearing. In Quebec and over the greater portion of New Brunswick a covering was general, but nowhere very deep, 12 inches at Brome, Que., being the deepest reported. In Southern and Eastern Nova Scotia and in Prince Edward Island the depth ranged between 2 and 4 inches.



# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, NOVEMBER, 1900

Barometer not reduced to Sea Level • Stations not furnished with Registering Thermometers

STATION	Latitude N.	Longitude W.	Elevation above Sea Level, in feet.	PRESSURE.		TEMPERATURE.		Mean temperature of day.	Mean amount of cloud.	DIRECTION OF WIND FROM								VELOCITY OF WIND		Amount.	Precipitation.	Days with 9/10 or more in month.	No. of Auroras.	No. of Thunderstorms.	No. of Fogs.									
				Mean reduced.	Range.	Mean.	From average.			Yearly average.	High.	Low.	Date.	Mean daily.	Mean relative humidity.	No. of days completely clouded.	N.	N.E.	E.							S.E.	S.	W.	W.	N.W.	C.	Total number of hours.	Mean miles per hour.	Highest days velocity.
N.-W. TERRITORIES—Con.																																		
Indian Head.	50 28 102 40	1024				13.2	-5.0 to 52.0	1	52.0	-8.0	20	61.6			8	5	1	1	9	18	4	5	0	90				1.00	0.20	20	4	1	0	
Cunningham Manor.	49 13 102 2					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			13	10	4	3	3	9	41	0	90					0.60	0.0	0	1	0	0	
Macleod.	49 14 103 24					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Gatesgarth.	50 29 105 0	750				15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Puncher Creek.	49 11 104 0	1957				15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Greendell.	50 13 102 33	1957				15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Amehall.	51 55 113 0					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Muskowkeung.	50 55 104 30					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Fort Simpson.	61 52 121 42					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Alameda.	49 15 102 17					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Dawson.	62 34 106 9					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Red Deer.	52 15 113 30					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Saskatoon.	52 15 106 20					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Croft Lake.	50 0 106 20					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Tazish (Yukon).	60 15 103 1					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Esvean.	60 15 103 1					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Moosomin.	50 0 101 37					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Arbuthnot Landing.	50 0 101 37					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
Calgary Exp. Station.	51 43 113 17					15.0	0.0 to 30.0	11	30.0	-30.0	20	19.0			0	0	4	4	0	0	6	12	0	30					0.60	0.0	0	1	0	0
MANITOBA.																																		
Winnipeg.	49 10 94 45	1200				16.2	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Winnipeg.	49 53 97 7	750				16.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
St. Albert (Avenue).	49 43 97 23	750				16.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Port Osborne.	49 55 98 11	890				17.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Brandon.	49 31 97 37	1130				16.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Channel Island.	52 15 97 23	1130				16.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Elkhorn.	49 58 101 16	890				15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Stony Mountain.	50 5 97 12					15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Baraboo.	50 54 101 20					15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Treloar.	49 58 98 42					15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Resbank.	49 54 100 37					15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Hillview.	49 54 100 37					15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Rosberry.	49 54 100 37					15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
Pipestone.	49 51 100 8	1140				15.0	0.17 to 46.2	1	46.2	-31.6	20	18.5			6	11	5	0	0	0	11	13	1	60				1.3	0.20	20	4	1	0	
ONTARIO.																																		
Baldwin.	43 25 79 30	687				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Sudbury.	45 25 80 35	1200				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Sarnia.	43 50 80 15	1200				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Mississauga.	43 25 80 15	1200				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Schreiber.	41 50 80 15	890				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Erasmus.	43 25 80 15	1200				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Collins.	43 25 80 15	1200				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Brantford.	43 25 80 15	1200				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Conestoga.	43 25 80 15	1200				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Windsor.	42 30 80 15	1250				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Alton.	42 30 80 15	1250				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11	IV	28.8 W	1.5	0.47	14	1	0	0	
Georgetown.	42 30 80 15	1250				17.0	-7.88 to 49.0	1	49.0	-49.0	20	18.5			3	2	4	5	8	5	1	20	5	62	11									







OBSERVATION AT STATIONS REPORTING RAIN, SNOW, WIND, & CHER.  
NOVEMBER, 1900.

D. B. S. 7

## RAINFALL.

## SNOW-FALL.

STATIONS.	Amount in inches.	No. of Days of or over	No. of Fair Days	Heaviest fall in Month.	Date	Amount in inches.	No. of Days	Heaviest fall in Month.
BRITISH COLUMBIA—								
Campbell River	6.66	11	19	2.43	34	•	1	•
Royal Oak	2.05	14	16	0.49	2	11.0	4	2.0
Goldfields	2.25	13	15	2.40	16	4	2.0	•
Goldstream Lake	2.51	12	16	1.3	25	12.7	•	3.8
Vancouver	2.68	12	16	2.25	24	10.0	4	4.0
Nanaimo	6.15	12	13	2.26	16	11.0	•	•
Nas Harbour	9.52	13	13	1.50	27	•	•	•
Port Essington	15.70	16	14	2.91	38	•	•	•
N. W. TERRITORIES—								
Strathcona	R	9.1	22	R	8	1.8	6	1.0
Beaver Hills	•	•	27	•	•	0.8	3	1.3
Conits	•	•	26	•	•	10.0	4	6.0
Salteaux	0.26	1	25	0.25	2	7.5	4	4.0
Indsbury	R	•	25	R	12	12.0	1	12.0
Immslat	•	•	25	•	•	6.0	7	3.0
Regina	•	•	23	•	•	6.0	3	6.0
Weyburn	0.10	2	25	0.95	1.4	1.0	6	4.0
Cochine	•	•	21	•	•	10.0	8	10.0
Stirling	R	•	22	R	2	10.0	6	6.0
Crescent Lake	0.20	1	23	0.20	2	9.6	3	8.0
Rouleau	0.00	0	25	•	•	15.5	5	•
MANITOBA—								
Norquay	R	•	24	R	8	11.5	•	5.5
Hartney	•	•	24	•	•	10.0	6	3.0
Rapid City	0.10	1	25	0.10	1	9.0	3	7.0
Oakbank	0.08	1	25	0.08	1	9.0	3	6.0
Pembina Crossing	•	•	20	•	•	13.0	10	•
Morden	•	•	20	•	•	13.0	4	8.0
Belmont	•	•	•	•	•	•	5	•
ONTARIO—								
Nottawasaga Island	2.80	8	19	0.80	4	0.0	3	6.0
Parma	2.77	8	19	0.75	20	14.0	3	7.0
Wyoming	2.80	5	22	2.00	19	6.0	3	5.0
Uxbridge	2.81	8	17	0.52	19	13.0	7	5.0
Emmerson	2.10	5	24	1.26	20	6.0	1	6.0
Elgin	2.61	7	18	0.52	21	10.0	6	12.0
Port Barwell	3.68	13	15	2.11	18	17.0	6	0.8
Georgetown	2.49	11	9	0.83	19	17.0	6	6.0
Wooler	1.87	8	18	0.61	18	10.5	1	4.0
Lonsdale	2.24	8	21	0.80	19	5.0	1	2.0
Oliver's Ferry	2.94	6	20	0.83	20	10.0	4	6.0
Arden	2.97	12	13	0.91	20	15.0	6	6.0
Jerny	2.03	5	22	1.00	18	12.0	5	6.0
Lynedoch	1.20	3	26	2.29	17.18	1.0	1	1.0
Kitley	1.14	9	15	1.09	27	10.5	6	3.0
Huntsville	3.72	4	22	2.25	21	24.5	4	18.0
Dealtown	3.45	10	20	0.73	21	•	3	•
Ursa	2.86	9	18	0.50	19	7.0	3	4.0
Lion's Head	3.09	13	•	1.22	20	•	7	•
Sunshine	2.86	9	14	1.09	20	7.8	4	6.0
Midland	3.77	13	13	0.0	20	3.5	4	6.0
Orangeville	3.41	13	12	1.01	19	23.0	9	13.3
Montana	3.86	4	21	1.32	21	10.0	7	4.0
Croydon	3.10	6	22	1.00	19	5.0	2	3.0
Ensdale	3.23	11	15	0.94	2	24.4	6	14.0
Westminster	3.61	7	19	1.77	19	•	5	•
Wilton	3.45	11	13	1.74	21	11.5	4	4.0
Scarbora	2.66	9	10	0.95	19	5.2	4	3.0
Dutton	3.23	5	20	1.29	18	3.2	4	2.0
Providence Bay	2.27	11	14	0.57	21	5.5	6	4.0
Deer Park	2.70	19	17	0.53	20	6.5	3	3.0
Amora	1.94	11	4	0.92	19	10.5	6	6.0
Watford	2.06	6	•	1.88	19	•	•	•
Cayuga	4.05	15	13	0.95	19	3.0	2	2.0
Goderich	1.70	3	26	0.70	19	12.5	2	4.0
Princeton	5.12	6	20	2.73	18.20	15.0	5	6.0
NEW BRUNSWICK—								
Point Eschumac	0.92	0	20	2.27	21	0.3	•	0.3
NOVA SCOTIA—								
Port Morien	3.17	9	17	0.74	9	4.7	4	4.0
P. E. ISLAND—								
Mount Stewart	3.22	5	23	1.45	27.25	8.0	2	6.0
Murray River	5.50	15	15	2.10	23	•	1	•

*Aurora recorded.*

When the class of aurora is noted by the observer, it is given (I) being the brightest, (IV) the feeblest in brilliancy.

2. Gravenhurst IV.
3. Haliburton.
11. Hollyview IV.
12. Stratheona IV.
18. Father Point III.
19. Prince Albert I, Oonikup.
24. Aweme IV.

*Thunder recorded on:—*

1. Weyburn.
3. Sturgeon Falls, Pembina Crossing.
7. Bermuda, Cockburn Island, Lucknow, Providence Bay.
8. Bermuda.
9. Halifax, Truro, Pictou.
18. London, Birnam, Lakefield.
20. Providence Bay, Midland.
21. Parry Sound, Port Stanley, Toronto, Guelph, Brome, Port Hope, Hamilton, Agincourt, Meaford, Beatrice, Lakefield, Lucknow, Peterboro, Stouffville, Owen Sound, Scarboro, Wiarton, Emsdale, Lion's Head, Dealtown.
22. Dealtown, Coldwater, Stony Creek, Dunnville, Bloomfield, Arden, Wooler, Georgetown.
23. Sable Island.
26. Parrshoro.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE  
SUN WAS ABOVE THE HORIZON IN THE MONTH OF NOVEMBER 1900

## HOURS EXIST

	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.	3	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8
Victoria				0.00	0.13	0.34	0.45	0.45	0.47	0.44	0.42	0.30	0.06	0.00		
Kuper Island				0.00	0.05	0.23	0.41	0.37	0.41	0.40	0.42	0.35	0.10	0.01		
Agassiz				0.00	0.06	0.33	0.43	0.46	0.41	0.41	0.40	0.32	0.12	0.00		
Battleford				0.00	0.10	0.27	0.45	0.41	0.42	0.42	0.37	0.15	0.01	0.00		
Indian Head				0.00	0.01	0.11	0.26	0.33	0.35	0.36	0.29	0.04	0.00	0.00		
Brandon			0.01	0.17	0.29	0.37	0.42	0.37	0.36	0.34	0.21	0.02	0.00	0.00		
Winnipeg			0.07	0.28	0.36	0.34	0.34	0.40	0.37	0.29	0.23	0.03	0.00			
Durham			0.00	0.12	0.11	0.13	0.13	0.13	0.14	0.13	0.13	0.10	0.00			
Woodstock			0.04	0.25	0.31	0.33	0.35	0.36	0.37	0.33	0.33	0.34	0.00			
Toronto			0.07	0.36	0.40	0.40	0.46	0.47	0.43	0.28	0.24	0.03	0.00			
Lindsay			0.03	0.21	0.32	0.37	0.38	0.35	0.38	0.33	0.23	0.12	0.00			
Barrie			0.16	0.35	0.38	0.42	0.34	0.36	0.50	0.48	0.41	0.00	0.00			
Kingston			0.10	0.22	0.31	0.29	0.36	0.34	0.37	0.31	0.10	0.01	0.00			
Ottawa			0.04	0.48	0.21	0.30	0.35	0.29	0.31	0.19	0.27	0.05	0.00			
Montreal			0.05	0.16	0.27	0.36	0.40	0.43	0.44	0.24	0.42	0.00	0.00			
Fredericton			0.06	0.17	0.24	0.29	0.35	0.37	0.37	0.40	0.27	0.11	0.00	0.00		
	Victoria	Kuper Island	Agassiz	Battleford	Indian Head	Brandon	Winnipeg	Durham	Woodstock	Toronto	Lindsay	Barrie	Kingston	Ottawa	Montreal	Fredericton
Mean proportion for month (Constant sunshine being 10)	0.33	0.31	0.31	0.29	0.19	0.28	0.30	0.12	0.28	0.34	0.28	0.27	0.26	0.25	0.29	0.27
Difference from average	0.15	0.10	0.12	0.02	0.06	0.03	0.04	0.00	0.03	0.06	0.04	0.08	0.01	0.04	0.00	0.00
Maximum daily amount	0.82	0.83	0.84	0.82	0.67	0.84	0.77	0.90	0.91	0.88	0.33	0.78	0.84	0.80	0.91	0.89
Date	6	26	4	5	4	29	13	3	3	27	4	27	16	23	23	28
No. of days completely clouded	10	13	9	11	13	14	10	24	12	10	13	13	13	12	15	17

## HIGHEST AND LOWEST TEMPERATURE AT DAWSON, YUKON

1911-1912

1913-1914

1911-1912				1912-1913			
Max.		Min.		Max.		Min.	
1	49.2	47.0	Cloudy	1	34.9	11.8	Snow, Rain
2	58.8	46.5	Clear	2	42.4	6.6	Cloudy
3	61.0	34.5	Cloudy	3	35.2	7.7	
4	60.8	38.7	Pt. Cloudy	4	40.2	7.7	
5	53.2	42.0		5	38.2	1.3	
6	50.0	37.0	Cloudy	6	34.2	19.4	
7	61.4	37.0	"	7	37.8	20.8	"
8	58.0	37.4	"	8	37.0	26.2	"
9	43.8	40.0	"	9	33.5	20.7	Snow, Rain
10	51.8	37.5	"	10	38.2	20.2	
11	54.3	30.9		11	33.2	20.3	
12	54.7	30.0	Fog	12	30.5	19.9	1st ice to run from Klondike
13	62.6	33.5	"	13	29.3	20.8	Cloudy
14	62.3	36.4		14	36.0	13.0	1st ice to run in Yukon
15	64.6	35.4	"	15	33.0	24.8	Cloudy
16	59.7	38.7	"	16	32.8	27.7	
17	46.9	33.9	"	17	32.5	26.6	
18	39.1	27.4	Snow	18	24.0	22.2	
19	41.8	33.8	"	19	47.4	15.4	
20	43.4	34.4	"	20	44.7	2.7	
21	47.9	37.7	Cloudy	21	7.6	6.3	
22	48.2	34.5		22	12.0	3.8	
23	48.2	30.3		23	21.7	2.8	
24	43.8	36.4	Fog	24	29.3	11.3	
25	49.5	34.4	Pt. Cloudy	25	22.0	19.7	
26	51.0	42.4	Fog	26	23.6	19.7	
27	48.2	38.9	Pt. Cloudy	27	13.6	5.5	
28	43.3	38.4	"	28	15.9	2.4	
29	37.5	39.5	Snow, Rain	29	12.6	5.9	
30	37.0	25.8	Clear	30	9.0	4.8	
				31	7.0	4.3	
51.42				26.61		14.28	
43.20				20.44			

## FORECASTS FOR NOVEMBER, 1900

The forecasts issued by this office at 11 p.m. each night are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 976. These were divided as follows:

DISTRICT.	No. ISSUED.	VERIFIED.			Percentage.
		No. Fully	No. Partly	No. Not	
MANITOBA .....	100	70	1	11	82.5
LAKE SUPERIOR .....	107	79	1	13	80.8
LOWER LAKE REGION .....	118	93	18	7	79.4
GEORGIAN BAY.....	115	97	12	6	89.6
OTTAWA VALLEY.....	108	93	11	4	90.2
UPPER ST. LAWRENCE .....	110	89	17	4	88.5
LOWER ST. LAWRENCE .....	102	86	12	4	89.2
GULF .....	106	86	15	5	88.2
MARITIME PROVINCES .....	110	84	16	13	82.4
<b>TOTAL .....</b>	<b>976</b>	<b>783</b>	<b>126</b>	<b>67</b>	<b>80.7</b>

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,  
*Director.*

Meteorological Office, Toronto,  
26th December, 1900.



# METEOROLOGICAL SERVICE, DOMINION OF CANADA.

## Monthly Weather Review.

VOL. XXIV

DECEMBER, 1900.

No. 12

### INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

### REMARKS UPON THE WEATHER.

The chief characteristics of the weather of December were the deficient precipitation, which was very general throughout the Dominion, and a remarkably high mean temperature over the western half of it. With few exceptions the proportion of bright sunshine was below average, clouded skies being frequent in most districts. Rivers and lakes were open until an unusually late date and in more southern districts a few migratory birds were still to be seen on the 31st.

The weather in British Columbia was exceptionally mild and dry, the mean temperature being considerably above average and the precipitation which was mostly rain, below. Strong winds and gales with clouded skies were unusually frequent and late in the month there were heavy snow storms over the lower mainland. On or about the last day of the month cold weather set in and the minimum temperatures of the month were recorded, the lowest being 12·8 below zero at Tobacco Plains.

Throughout the North-west Territories the weather was exceedingly mild and in most districts the precipitation was average or somewhat below. In southern districts the mean temperature was greatly in excess of average and there was little cold weather until after the 7th. There were many exceptionally fine days but the proportion of bright sunshine was somewhat below average in most districts. Rivers frozen in November in some cases opened and did not close again until an unusually late date.

In Manitoba the weather was not quite as mild as in the Territories but the mean temperature was considerably above average. The precipitation, which was mostly snow, did not differ much from average and was sufficient for good sleighing in most districts. Three cold waves passed over the province during the month, the first occurred on the 8th, but did not last long, the second set in more gradually on the 12th, and the third which appeared more lasting occurred on the 29th, the minimum temperatures of the month being recorded two days later. In most districts clouded skies were frequent and the proportion of bright sunshine was somewhat below average.

Throughout the greater portion of Ontario the weather was somewhat milder than usual but at some eastern and northern stations the mean temperature, on the contrary, was below average. The precipitation, which was chiefly rain in southern and snow in northern districts, was below average generally and on the 30th the ground was bare or nearly so throughout the province. From the 9th to the 17th when the coldest weather occurred, temperatures well below zero were recorded in northern and eastern districts. The proportion of bright sunshine was generally below average but at Toronto it was above. Rivers and lakes were open until an unusually late date, a few migratory birds were still to be seen in sheltered places up to the 31st, and in Toronto dandelions were gathered on the 12th.

In the Province of Quebec the weather in most districts was somewhat colder than usual, but at a few places on the Lower St. Lawrence the mean temperature was above average. The precipitation, which was below average, was mostly snow and there was good sleighing throughout the month. The coldest period occurred on or about the 11th when the temperature fell to -29·0 at Brome. No storms of much importance were reported.

The weather in New Brunswick was dull, cold and dry, both the temperature and precipitation being below average. The snow that fell, though partly melted, gave good sleighing throughout the greater part of the month, a depth of ten inches being general on the 31st, whilst in some districts it exceeded this amount.

In Nova Scotia the weather was unusually fine and exceptionally dry whilst the temperature which did not differ much from average varied, it being slightly above average at some places and below at others. There was good sleighing from the 5th to 25th, but after the latter date the ground was bare in many districts. Only two gales of any importance were reported, the first on the 5th being accompanied by heavy snow and the second occurring on the 9th.

The weather in Prince Edward Island was generally fine and dry but altogether it did not differ much from the normal. It was unusually cold during the second week, and only moderately cold during the remainder of the month. On the 11th when the minimum temperatures of the month occurred  $-5.1$  was recorded at Summerside and  $-3.0$  at Hamilton. F. F. PAYNE.

### ATMOSPHERIC PRESSURE.

The mean atmospheric pressure was below average in all parts of Canada except on the coast line of British Columbia where the average was just about maintained. In the North west Territories the deficiency was generally from  $.05$  to  $.09$  of an inch and elsewhere from  $.01$  to  $.04$  of an inch. At St. John's Newfoundland the deficiency amounted to as much as  $.15$  of an inch and at Bermuda to  $.06$  of an inch.

### HIGH AREAS.

There was a considerable amount of high pressure during the month. Eight well marked areas were charted, Nos. 1 and 5 being pronounced.

No. 1 was a continuance of No. 8 on the November chart. It hovered in the vicinity of Tennessee and Kentucky until the 2nd, and then passed off the coast of New Jersey. No. 2 passed over the Southern States and off the Middle Atlantic Coast; it was probably an offshoot of an extensive system at that time covering the Pacific States. No. 3 was a very moderate area which between the 6th and 8th travelled from Northern Manitoba to the Ottawa Valley and then dispersed. No. 4 moved into Alberta on the night of the 7th with unusual rapidity and on the 8th was situated in the Territories accompanied by a very pronounced cold wave, the barometer reduced to sea level reading over  $31.00$  inches and the temperature ranging from zero to  $14^{\circ}$  below. The cold weather spread very quickly throughout Canada to the Atlantic the temperature during the night of the 9th falling to  $39^{\circ}$  below zero in Northern Ontario and from  $2^{\circ}$  to  $16^{\circ}$  below in Quebec. The high area after leaving the North-west Territories travelled southeastward and on the 13th passed off the coast of the Middle Atlantic States; cold wintry weather meanwhile prevailing in all parts of the Dominion. No. 5 was another very important area with a cold wave. It moved into Manitoba from the Northward on the 12th and spread quickly over Canada to the Atlantic its centre travelling slowly to the Ottawa and Upper St. Lawrence Valleys and thence southward to the South Atlantic United States coast. It was accompanied by a continuance of cold weather from Ontario to the Maritime Provinces, the greatest cold being reached on the 17th when Northern localities recorded from  $2^{\circ}$  to  $22^{\circ}$  below zero. No. 6 moved on to the California coast on the 21st and then spread slowly over the Continent the main area passing over the Southern States, and an off shoot, over Manitoba, the Lake Region and the Ottawa and Upper St. Lawrence Valleys. Moderately cold weather accompanied the system in Canada except in Northern localities where on the night of the 26th, temperatures below zero were generally recorded. No. 7 was at first an area of considerable energy. On the 27th it was centred over British Columbia whence it travelled southeastward and on the 30th passed off the coast of Virginia. It did not materially affect Canadian weather. No. 8 was situated in Northern British Columbia on the morning of the 29th whence it travelled with rapidity into Alberta and Assiniboia and then southward to Wyoming where it was situated on the 31st accompanied by very cold weather.

### LOW AREAS.

Thirteen areas of low pressure were sufficiently well marked to be charted but by far the larger number were of very feeble energy. As many as eight passed from British Columbia far north of the Lake Region to the Gulf of St. Lawrence.

No. 1 was a very moderate depression situated in Saskatchewan on the morning of the 1st and dispersed over Michigan on the 3rd. It caused light falls of sleet and snow in Manitoba and the Lake Superior Region. No. 2 was another area of very little energy. Between the 2nd and 14th it travelled from Northern British Columbia to Lake Superior and then became merged into No. 3. It was attended by a few scattered showers of sleet and snow. No. 3 appeared over the Gulf of Mexico on the 3rd and proved to be an important disturbance which moved northeastward over the United States Atlantic seaboard and on the 5th reached the Maritime Provinces. It caused a moderate gale in the Lake Region and a fresh gale throughout Eastern Canada together with a heavy snowfall in the Maritime Provinces but only moderate precipitation in Ontario.



and Quebec. No. 1 was a very shallow depression which passed over the North-west Territories on the 5th accompanied by a few light local snowfalls and thence its course was southeastward to the South Atlantic States. No. 5 moved into Alberta during the night of the 6th and between the 7th and 9th travelled as an energetic depression over Canada to the Gulf of St. Lawrence. It did not cause much precipitation but it was accompanied throughout its course by fresh to heavy gales, the gale in the Gulf of St. Lawrence being particularly severe and of long duration. No. 6 travelled with much rapidity between the 11th and 13th from Alberta to the Maritime Provinces its accompanying snowfall being fairly general but very light, except in Eastern Ontario and Western Quebec where the fall amounted to about six inches. The winds meanwhile increased to a moderate gale over the Lake Region. No. 7 was very severe on the British Columbia Coast between the 13th and 15th but afterwards as it passed over Canada to the Gulf of St. Lawrence it was of very moderate intensity and gave nothing beyond light showers of rain and snow. No. 8 travelled from the Gulf of Mexico over the South Atlantic States to the coast of Virginia and thence out to sea. It did not affect Canadian weather. No. 9 moved on to the British Columbia coast on the 19th attended by very stormy weather and reached Lake Superior on the 22nd. No. 10 was subsidiary to No. 9 forming in the southern quadrant of the latter. On the evening of the 21st it was centred over Kansas whence it moved very slowly first to Lake Superior and then far north to the Gulf of St. Lawrence. During its presence light falls of rain and snow were of frequent occurrence from Ontario to the Maritime Provinces. No. 11 was a very moderate depression which travelled over Canada from British Columbia to the Gulf of St. Lawrence between the 24th and 28th accompanied by a few light showers of snow or rain. No. 12 passed over the Territories and Manitoba between the 28th and 29th attended by high winds and light snowfalls and thence over Ontario Quebec and the Maritime Provinces accompanied by light falls of snow or rain but by no very strong winds. No. 13 was subsidiary to No. 12; it formed in the vicinity of Northern Texas, after reaching the Middle Atlantic United States Coast and passed on the 31st, over the Maritime Provinces, giving a general and moderately heavy rainfall.

#### WINDS.

In British Columbia considering the Lower Mainland and Vancouver Island only; the general direction of the wind was northerly to easterly. From the 13th until the 21st very stormy conditions prevailed and fresh to heavy gales were of almost daily occurrence, but before and after these dates the wind mileage was very small and the force of a fresh breeze was seldom obtained.

In the North-west Territories and Manitoba the prevailing direction was westerly and fresh or strong breezes were of almost daily occurrence, reaching on several occasions the force of a gale, more especially on the 8th, 22nd and 23rd.

In the Lake Region the prevailing direction was also westerly but the wind mileage was not excessive for the season of the year, and the number of gales was less than the average amount, only four occurring; the heaviest being experienced on the 8th.

In the St. Lawrence Valley and the Maritime Provinces the westerly direction likewise predominated, and but two gales occurred; strong winds were not very frequently recorded and this was especially the case in the Maritime Provinces. The gale which set in on the 9th was an exceptionally heavy one in the Gulf of St. Lawrence where it did not abate until the 12th. The other gale experienced was on the 5th and it was generally heavy. The storms of the month were amply and successfully warned, but on the 21st warnings issued to our Atlantic Coast were not verified, the storm subsequently passing far south of the Maritime Provinces and not affecting our seaboard.

#### BRIGHT SUNSHINE.

The amount of bright sunshine was slightly above average at Agassiz and Toronto but all the other sunshine recording stations in Canada record an amount below the average, the greatest deficiencies being reported from Winnipeg, Kingston and Montreal.

#### TEMPERATURE.

The mean temperature of December was considerably above average over the Dominion from Lake Superior westward to British Columbia. From Thunder Bay district to Manitoba the positive departure from average was from 4 to 6°, and in Western Assiniboia and in Alberta it ranged from 14° at Medicine Hat to 9° at Edmonton. In British Columbia it was as much as 10° on the Upper Mainland and but 5° on Vancouver Island.

Over the larger portion of Ontario the temperature was in excess of the average, 1° to 3°, but in the Ottawa Valley it was just average, and to the eastward of this there was a very general negative departure, ranging from 1° to 3°.

*The Highest and Lowest Temperatures recorded in each Province during December, 1900, were, —*

British Columbia,	65.0 on 19th at Quesnelle.	12.8 on 31st at Tobacco Plains.
North-west Territories,	58.0 on 28th at Pincher Creek.	30.0 on 31st at Muskowpetungs.
Manitoba,	44.0 on 21st at Aweme and Treherne.	28.8 on 31st at Brandon.
Ontario,	62.2 on 31st at Port Dover.	39.0 on 14th and 31st at White River.
Quebec,	41.0 on 31st at Brome.	29.0 on 11th at Brome.
New Brunswick,	49.0 on 24th at Grand Manan.	22.5 on 18th at Sussex.
Nova Scotia,	49.0 on 31st at Sable Island.	9.0 on 9th at Bridgetown.
Prince Edward Island,	39.3 on 31st at Charlottetown.	5.4 on 11th at Summerside.

#### PRECIPITATION.

There was a pronounced deficiency of precipitation in nearly all parts of the Dominion: in both Ontario and Quebec the combined snowfall and rainfall was in many districts less than half the average and at most points near Lakes Erie and Ontario it was scarcely more than quarter the average amount.

In the Maritime Provinces and British Columbia precipitation was also deficient to a marked degree. Reports from Manitoba and the Territories seem to indicate a nearly average snowfall in Manitoba and Assiniboia and a somewhat heavier fall than usual in Saskatchewan.

At the close of the month the ground in all the more southern and western parts of both Ontario and Nova Scotia was either entirely bare of snow or there were but a few patches here and there; all lower levels in British Columbia were also bare.

In Saskatchewan, Northern Manitoba, Northern Ontario, throughout the Province of Quebec, and in the interior of New Brunswick, the covering was very generally over 10 inches and in many localities it was nearly 20 inches. Over the more southern portions of New Brunswick and in Prince Edward Island and also in Southern Manitoba and southern portions of the North-west Territories there was just about enough snow for sleighing.

#### THICKNESS OF ICE.

**NORTH-WEST TERRITORIES AND MANITOBA.**—Medicine Hat, 12 inches; Swift Current, 15 inches; Minnedosa, 18 inches.

**ONTARIO.**—Port Arthur, 4½ inches; White River, 7 inches; Parry Sound, 4½ inches; Port Stanley, 2 inches; Bissett, 4 inches; Paris, 3 inches; Orillia, 8 inches; Georgetown, 5 inches; Gravenhurst, 4 to 6 inches; Haliburton, 9 inches.

**MARITIME PROVINCES.**—Fredericton, 15 inches; Halifax, 6 inches; Charlottetown, 15 inches.

# PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, DECEMBER, 1900.

a. Barometer not reduced to Sea Level. • Stations not furnished with Registering Thermometers.

STATION.	Latitude N.	Longitude W.	PRESSURE.			TEMPERATURE.				Mean.	Difference from average.	Years observ.	Highest.		Date.	Lowest.	Date.	Mean daily range.	Mean temperature of month.	Mean amount of cloud.	No. of days completely cloud.	DIRECTION OF WIND FROM						VELOCITY OF WIND			PRECIPITATION.			No. of Fair days.	No. of Autumns.	No. of Days.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			Mean reduced.	Highest.	Lowest.	in.	in.	N.	N. E.				E.	S. E.								S.	W.	W. W.	N. W.	C.	Total number of hours.	Mean miles per hour.	Highest days velocity.	Date and direction from.	Amount.	1 difference from average.	Heaviest fall in month.				Days with falling rain.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												

## PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, DECEMBER, 1900

a. Barometer not reduced to Sea Level. \* Stations not furnished with Registering Thermometers.

STATION.	Latitude N.	Longitude W.	Elevation above Sea Level in feet.	PRESSURE.			TEMPERATURE.			Mean amount of Cloud.	DIRECTION OF WIND FROM						VELOCITY OF WIND			PRECIPITATION.			Days with 1/16 in. or more.	No. of four days.	No. of three days.	No. of two days.	No. of fogs.			
				Mean reduced.	Highest.	Lowest.	Range.	Mean daily range.	Mean relative humidity.		N.	N.E.	E.	S.E.	S.W.	W.	N.W.	Total number of hours.	Mean miles per hour.	Highest day's velocity.	Date and direction.	Amount.						Difference from Average.		
																												in.	in.	in.
N. W. TERRITORIES:—Cont.																														
Cambridge Bay	69 43 102 2			9.9	35.6	4-27.0	31 14 7	11.4			4	5	0	9	3	13	11	12	1	60				0.60	0.20	0	0	0		
Maclean	49 43 113 21			34.2	35.6	6-2.0	31 16 9	11.9			10	0	2	4	5	13	36	6	0	93				0.65	1	0.15	1.5	0	0	
Dawson	60 20 105 0			13.3	29.0	21-55.0	31 20 6	12.0			0	0	1	9	0	5	10	0	31				0.12	1	0.12	1.0	0	0	0	
Gateshead	49 11 104 0			12.5	11.0	14-19.0	30 24 7	12.5			1	6	4	12	20	11	14	0	30				0.12	1	0.12	1.0	0	0	0	
Gravel Creek	50 23 102 52			12.5	11.0	14-19.0	30 24 7	12.5			1	6	4	12	20	11	14	0	30				0.12	1	0.12	1.0	0	0	0	
Greenhill	50 23 102 52			12.5	11.0	14-19.0	30 24 7	12.5			1	6	4	12	20	11	14	0	30				0.12	1	0.12	1.0	0	0	0	
Knoch	51 53 113 0			10.5	14.0	50-55.0	31 25 8	12.5			3	2	0	1	13	0	2	11	30	62				0.12	1	0.12	1.0	0	0	0
Moosehide	50 55 104 20			10.5	14.0	50-55.0	31 25 8	12.5			3	2	0	1	13	0	2	11	30	62				0.12	1	0.12	1.0	0	0	0
Fort Simpson	61 52 121 43			18.6	21.0	7-17.0	31 25 8	12.5			2	1	0	2	1	12	2	11	0	31				0.12	1	0.12	1.0	0	0	0
Alameda	49 15 102 17			5.8	12.0	7-17.0	31 25 8	12.5			1	6	0	0	9	18	21	13	0	78				0.12	1	0.12	1.0	0	0	0
Red Deer	52 15 113 30			5.8	12.0	7-17.0	31 25 8	12.5			1	6	0	0	9	18	21	13	0	78				0.12	1	0.12	1.0	0	0	0
Saskatoon	52 15 113 30			5.8	12.0	7-17.0	31 25 8	12.5			1	6	0	0	9	18	21	13	0	78				0.12	1	0.12	1.0	0	0	0
Crane Lake	50 0 109 50			8.0	13.0	5-14.0	31 25 8	12.5																0.12	1	0.12	1.0	0	0	0
Tragab (Yukon).	60 17 134 18			10.4	12.0	5-14.0	31 25 8	12.5																0.12	1	0.12	1.0	0	0	0
Estevan	50 12 103 4			8.7	14.0	1-15.0	31 25 8	12.5																0.12	1	0.12	1.0	0	0	0
Moosomin	50 0 101 3			8.7	14.0	1-15.0	31 25 8	12.5																0.12	1	0.12	1.0	0	0	0
Athabasca Landing	54 43 113 17																													
Calgary (Ex. Station)																														
MANITOBA:																														
Winnipeg	49 52 97 7			12.3	17.4	1-22.0	31 18 4	12.3			0	1	5	3	0	3	20	13	17	42				0.65	0.02	0.34	7.20	0	0	0
St. Albans (Aweme)	49 43 97 53			11.4	14.0	1-22.0	31 18 4	12.3			9	1	2	9	11	5	15	10	0	62				0.65	0.02	0.34	7.20	0	0	0
Fort Osborne	49 53 97 11			10.1	14.0	1-22.0	31 18 4	12.3																0.65	0.02	0.34	7.20	0	0	0
Emerson	49 1 97 13			11.8	14.0	1-22.0	31 18 4	12.3			2	14	6	1	0	1	9	5	2	93				1.20	0.05	0.34	2.42	0	0	0
Portage la Prairie	49 51 97 57			11.8	14.0	1-22.0	31 18 4	12.3			13	6	7	2	30	1	16	18	0	93				0.45	0.05	0.34	2.42	0	0	0
Brandon	49 51 97 57			11.8	14.0	1-22.0	31 18 4	12.3			13	6	7	2	30	1	16	18	0	93				0.45	0.05	0.34	2.42	0	0	0
Channel Island	52 18 97 23			11.4	14.0	1-22.0	31 18 4	12.3			5	1	1	4	13	6	9	19	0	6				0.45	0.05	0.34	2.42	0	0	0
Elkhorn	49 58 101 16			11.4	14.0	1-22.0	31 18 4	12.3			5	1	1	4	13	6	9	19	0	6				0.45	0.05	0.34	2.42	0	0	0
Stony Mountain	50 5 97 13			9.0	14.0	1-22.0	31 18 4	12.3			0	2	0	20	3	10	3	44	1	93				1.45	0.05	0.34	2.42	0	0	0
Barnardo	50 50 101 20			13.6	14.0	1-22.0	31 18 4	12.3																1.45	0.05	0.34	2.42	0	0	0
Trudelle	49 38 98 1			9.6	14.0	1-22.0	31 18 4	12.3			2	5	1	0	1	21	1	14	0	90				0.62	0.05	0.34	2.42	0	0	0
Rosedale	49 38 98 1			9.6	14.0	1-22.0	31 18 4	12.3																0.62	0.05	0.34	2.42	0	0	0
Hillview	49 34 100 35			13.6	14.0	1-22.0	31 18 4	12.3																0.62	0.05	0.34	2.42	0	0	0
Roseberry	49 34 100 35			13.6	14.0	1-22.0	31 18 4	12.3																0.62	0.05	0.34	2.42	0	0	0
Pipestone	49 34 100 35			13.6	14.0	1-22.0	31 18 4	12.3																0.62	0.05	0.34	2.42	0	0	0
ONTARIO:																														
Baileysbury	47 20 79 30			11.5	18.0	19-26.3	31 17 9	12.17			3	2	4	5	8	8	7	20	5	62				1.95	1	0.21	10.7	0	0	0
Sudbury	46 21 80 35			10.7	18.0	19-26.3	31 17 9	12.17			15	5	5	12	13	11	15	17	0	93				1.95	1	0.21	10.7	0	0	0
Savannah	48 21 82 18			13.3	18.0	19-26.3	31 17 9	12.17			36	0	2	2	9	3	3	0	38				1.95	1	0.21	10.7	0	0	0	
Mississauga	43 40 79 15			13.3	18.0	19-26.3	31 17 9	12.17			2	6	8	1	4	6	9	8	18	62				1.95	1	0.21	10.7	0	0	0
Schreiber	44 53 79 41			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Barrie	44 53 79 41			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Brantford	43 20 80 22			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Brantford	43 20 80 22			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Parry Sound	45 15 80 0			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Georgian Bay	45 15 80 0			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Sudbury	46 21 80 35			10.7	18.0	19-26.3	31 17 9	12.17			15	5	5	12	13	11	15	17	0	93				1.95	1	0.21	10.7	0	0	0
Owen Sound	44 34 80 35			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Uxbridge	43 40 79 15			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Georgian Bay	45 15 80 0			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Welland	43 20 80 22			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Peterborough	44 30 79 15			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Lindsay	44 30 79 15			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Peterborough	44 30 79 15			13.3	18.0	19-26.3	31 17 9	12.17			11	17	60	30	38	216	173	94	714				1.95	1	0.21	10.7	0	0	0	
Welland	43 20 80 22	</																												



## PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, SEPTEMBER, 1900.

a Barometer not reduced to sea level. Stations not furnished with Registering Thermometers.

STATION.	Latitude N.	Longitude W.	PRESSURE.		TEMPERATURE.					DIRECTION OF WIND FROM					VELOCITY OF WIND			PRECIPITATION			No. of Thunderstorms.	No. of Hurricanes.													
			Mean Reduced	Level, in feet.	Date.	Lowest.	Highest.	Years observed.	Difference from average.	Mean daily.	Mean range.	Mean temperature of day.	Mean amount of cloud.	No. of days completely clouded.	N.	S.E.	S.W.	W.	N.W.	Total number of hours.			Mean miles per hour.	Highest velocity days.	Direction from.	Amount.	Difference from average.	Heaviest fall in month.	Days with 40 or more inches.						
QUEBEC—(Continued.)																																			
Abitibi	48 45	79 22																																	
Anticosti, E. Pt.	49 35	61 42																																	
Bird Rocks	47 31	61 53																																	
Sherbrooke	45 24	71 53																																	
Perce	48 31	64 12																																	
St. Agathe des Monts	47 53	70 2																																	
St. Anne de la Pocatière	47 53	70 2																																	
NEW BRUNSWICK:																																			
Fredericton	45 37	66 36																																	
Chatham	44 37	63 29																																	
Grand Manan	44 37	63 29																																	
Point Lepreau	45 4	66 25																																	
St. John	45 17	66 25																																	
Dieppe	45 17	66 25																																	
St. Stephen	45 11	67 16																																	
Moncton	45 38	65 38																																	
Sussex	45 38	65 38																																	
Edmundston	47 39	63 12																																	
NOVA SCOTIA:																																			
Halifax	44 30	63 36																																	
Sydney	45 10	60 10																																	
Truro	45 22	63 18																																	
Yarmouth	45 30	66 52																																	
Pictou	45 42	62 41																																	
Port Hastings	45 30	61 42																																	
Whitehead	45 15	61 46																																	
Sable Island, E. Pt.	43 58	61 30																																	
Guysborough	43 52	61 30																																	
Sable Island M. station	43 52	61 30																																	
Parrishore	44 28	61 25																																	
Wolfville	45 17	61 20																																	
Bridgetown	45 40	63 16																																	
P. E. ISLAND:																																			
Charlottetown	46 11	63 10																																	
Summerside	46 18	63 21																																	
Hamilton	46 25	63 48																																	
Murray River	46 25	63 48																																	
NEWFOUNDLAND:																																			
St. John's	47 34	52 42																																	
Cherry	47 34	52 42																																	
St. John's	47 34	52 42																																	
Cape Norman	61 48	56 52																																	
Amor Point	61 48	56 52																																	
Point Rich	60 42	57 23																																	
BERMUDA:																																			
Prospect	32 30	61 50																																	

**PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING  
DECEMBER, 1900.**

STATIONS.	RAINFALL.					SNOWFALL.				Remarks.
	Amount in inches.	No. of Days of or over	No. of Fair Days.	Heaviest Fall in Month.	Date	Amount in inches.	No. of Days.	Heaviest Fall in Month.	Days.	
BRITISH COLUMBIA—										
Nanaimo .....	11.41	9	22	3.18	18-19	.....	.....	.....	.....	
Caulfields .....	8.56	20	11	1.04	14	.....	1	.....	.....	Fog on 8 days.
Goldstream Lake .....	12.97	23	8	2.88	20	.....	.....	.....	.....	
Vancouver .....	9.61	18	12	1.37	19	2.0	1	2.0	.....	Fog 1 day.
Port Essington .....	17.38	27	4	3.19	7	.....	.....	.....	.....	
Nass Harbour .....	3.44	19	18	1.05	5	4.0	3	2.0	.....	Frost 9th and 12th.
Cumberland .....	17.95	16	15	3.50	16	.....	.....	.....	.....	Severe storm 15th.
Royal Oak .....	5.46	17	13	1.01	1	0.5	1	0.5	.....	
N. W. TERRITORIES—										
Cochrane .....	.....	.....	.....	.....	.....	0.3	3	0.3	.....	
Weyburn .....	0.20	2	24	0.20	4	3.0	3	4.0	.....	13th, blizzard of the worst kind.
Salteaux .....	.....	.....	.....	.....	.....	4.0	3	2.0	.....	30th, 25° below zero.
Innisfail .....	.....	.....	.....	.....	.....	2.8	3	2.0	.....	28th, bad blizzard.
Combs .....	.....	.....	.....	.....	.....	16.3	5	6.0	.....	29th, blizzard.
Didsbury .....	R	.....	27	R	27	1.0	4	1.0	.....	27th, terrible storm.
Strathcona .....	0.22	1	26	0.22	28	2.7	5	1.3	.....	icy roads, poor sleighing.
Stirling .....	.....	.....	.....	.....	.....	6.0	3	4.0	.....	
Beaver Hills .....	0.11	1	26	0.11	28	2.0	4	1.0	.....	29th big wind.
Regina .....	.....	.....	28	.....	.....	1.9	2	0.7	.....	Fog 4 days, blizzard on 8th, 11th, 14th, 21st & 29th.
MANITOBA—										
Oakbank .....	R	.....	25	R	21	4.0	4	2.0	.....	Cold dip 19th, 13th, 23rd & 24th.
Morden .....	.....	.....	.....	.....	.....	5.5	6	3.0	.....	
Rapid City .....	.....	.....	.....	.....	.....	9.5	4	3.2	.....	
Belmont .....	.....	.....	.....	.....	.....	.....	8	.....	.....	
Pembina Crossing .....	.....	.....	.....	.....	.....	.....	11	.....	.....	Aurora on 27th.
Norquay .....	.....	.....	.....	.....	.....	6.3	7	1.8	.....	Very mild month until 30th.
Hartney .....	.....	.....	.....	.....	.....	11.0	4	3.0	.....	
ONTARIO—										
Uxbridge .....	1.05	4	23	0.75	3	4.0	6	2.0	.....	13th, blizzard.
Brimmore .....	0.20	1	26	0.20	23	8.0	4	4.0	.....	
Providence Bay .....	0.70	4	22	0.21	18	14.7	6	6.0	.....	
Lynedoch .....	0.25	1	.....	0.25	4	0.5	.....	.....	.....	Snow flurries not exceeding 0.5 in.
Enniskyle .....	0.41	2	17	0.36	24	30.3	13	5.5	.....	
Montague .....	0.09	1	27	0.09	23	10.0	3	5.0	.....	10th, 10° below zero.
Ursa .....	0.64	2	26	0.34	3	23.0	7	6.0	.....	13th, 6° below zero.
Huntsville .....	1.46	3	22	0.76	23	17.0	12	9.0	.....	
Sunshine .....	0.60	3	15	0.20	4	12.3	12	9.0	.....	
Scarboro .....	0.61	4	15	0.41	5	1.5	12	1.0	.....	On 9 days snow was only light.
Orangeville .....	0.34	2	22	0.34	5	1.8	7	0.8	.....	(flurries).
Aurora .....	0.49	2	23	0.39	4	5.9	7	2.0	.....	High winds on 9th.
Elgin .....	.....	.....	.....	.....	.....	16.0	11	9.0	.....	
Wyoming .....	0.20	1	27	0.20	23	5.0	3	3.0	.....	3rd, ploughs going.
Oliver's Ferry .....	.....	.....	26	.....	.....	7.1	5	3.0	.....	28th, no frost in ground.
Goderich .....	.....	.....	.....	.....	.....	9.5	5	3.0	.....	9th, wind 36 miles per hour.
Arden .....	1.07	8	19	0.29	1	13.0	7	5.0	.....	
Midland .....	0.67	3	21	0.34	4	10.0	5	4.0	.....	9th, 10th heavy gale.
Jermya .....	1.20	2	.....	1.00	3	3.0	.....	2.0	.....	24th, cattle looking for grass.
Port Burwell .....	0.25	2	24	0.25	4	2.3	6	0.8	.....	
Parma .....	0.32	1	26	0.32	13	6.0	4	6.0	.....	
Groydon .....	0.50	1	28	0.50	1	7.5	2	6.0	.....	
Georgetown .....	0.48	4	15	0.25	4	1.8	11	1.5	.....	31st, most beautiful; not a particle.
Wooler .....	0.95	3	25	0.72	1	1.0	6	3.0	.....	Fog on 5 days.
Westminster .....	0.22	1	27	0.22	23	.....	.....	.....	.....	14th, 10° below zero.
Watford .....	0.40	1	.....	0.10	23	.....	.....	.....	.....	
Bealton .....	0.19	2	27	0.14	24	1.5	2	1.0	.....	
Princeton .....	0.32	2	24	0.25	17	.....	6	.....	.....	Only light flurries.
Lion's Head .....	0.56	2	28	0.29	18	.....	1	.....	.....	do do
Deer Park .....	0.68	3	23	0.44	5	0.3	3	0.3	.....	do do
Dutton .....	0.04	1	27	0.04	16	1.0	3	1.0	.....	
Warton .....	0.61	3	19	0.38	18	23.0	9	4.0	.....	Month ends fine.
Kitley .....	0.2	1	22	0.20	1	12.0	8	4.0	.....	31st, good sleighing.
Landsdowne .....	0.72	2	23	0.35	13	7.0	6	3.0	.....	
Cayuga .....	1.25	4	22	0.45	1	13.0	4	12.0	.....	
NEW BRUNSWICK—										
Point Escumene .....	0.40	2	24	0.40	25	1.1	4	0.4	13-14	
NOVA SCOTIA—										
Port Morien .....	0.90	5	23	0.44	30	13.0	4	8.0	.....	
P. E. ISLAND—										
Murray River .....	R	.....	.....	.....	.....	25.0	8	9.0	4	

*Aurora Recorded*

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV) the feeblest in brilliancy.

- 5. Channel Island, IV.
- 9. Red Deer, IV. Oonikus.
- 11. Hillview, IV.
- 14. Channel Island, IV.
- 18. Hillview, IV.
- 24. Red Deer, IV.
- 25. Hillview, IV.
- 27. Prince Albert, I; Calgary, I; Pembina Crossing, II; St. Albans, III.



PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE  
THE HORIZON IN THE MONTH OF DECEMBER, 1904.

	HOURS ENDING															
	5 A.M.	6 A.M.	7 A.M.	8 A.M.	9 A.M.	10 A.M.	11 A.M.	NOON	1 P.M.	2 P.M.	3 P.M.	4 P.M.	5 P.M.	6 P.M.	7 P.M.	8 P.M.
VICTORIA .....				0.00	0.01	0.07	0.14	0.16	0.19	0.27	0.35	0.46	0.51	0.55	0.57	0.58
KUPER ISLAND .....				0.00	0.01	0.11	0.19	0.20	0.16		0.35	0.48	0.51	0.53	0.54	0.55
AGASSIZ .....				0.00	0.00	0.03	0.21	0.29	0.31	0.28	0.27	0.14	0.00	0.00	0.00	0.00
BATTLEFORD .....				0.00	0.13	0.33	0.39	0.33	0.27	0.20	0.13	0.01	0.00	0.00	0.00	0.00
INDIAN HEAD .....				0.00	0.00	0.04	0.22	0.30	0.29	0.27	0.19	0.01	0.00	0.00	0.00	0.00
BRANDON .....				0.16	0.34	0.39	0.48	0.46	0.44	0.42	0.39	0.30	0.20	0.10	0.00	0.00
WINNIPEG .....				0.00	0.19	0.27	0.42	0.37	0.35	0.34	0.34	0.14	0.00	0.00	0.00	0.00
DURHAM .....				0.00	0.00	0.00	0.12	0.15	0.14	0.12	0.15	0.12	0.07	0.00	0.00	0.00
WOODSTOCK .....				0.00	0.10	0.05	0.20	0.18	0.24	0.22	0.23	0.25	0.17	0.00	0.00	0.00
TORONTO .....				0.00	0.08	0.19	0.30	0.41	0.39	0.37	0.31	0.20	0.09	0.00	0.00	0.00
LINDSAY .....				0.00	0.02	0.15	0.17	0.23	0.20	0.24	0.14	0.12	0.00	0.00	0.00	0.00
BARRIE .....				0.00	0.09	0.14	0.10	0.11	0.17	0.14	0.01	0.06	0.00	0.00	0.00	0.00
KINGSTON .....				0.00	0.12	0.20	0.18	0.16	0.20	0.20	0.23	0.10	0.00	0.00	0.00	0.00
OTTAWA .....				0.00	0.01	0.12	0.14	0.11	0.16	0.21	0.19	0.15	0.00	0.00	0.00	0.00
MONTREAL .....				0.00	0.08	0.21	0.26	0.22	0.25	0.20	0.14	0.12	0.00	0.00	0.00	0.00
FREDERICTON .....				0.16	0.26	0.44	0.50	0.52	0.52	0.49	0.37	0.03	0.00	0.00	0.00	0.00

	VICTORIA.	KUPER ISLAND.	AGASSIZ.	BATTLEFORD.	INDIAN HEAD.	BRANDON.	WINNIPEG.	DURHAM.	WOODSTOCK.	TORONTO.	LINDSAY.	BARRIE.	KINGSTON.	OTTAWA.	MONTREAL.	FREDERICTON.
MEAN PROPORTION FOR MONTH..... (Constant sunshine being 1.)	0.11	0.13	0.18	0.23	0.17	0.31	0.28	0.09	0.16	0.27	0.16	0.09	0.16	0.12	0.14	0.14
DIFFERENCE FROM AVERAGE.....	-0.05	-0.02	0.03	-0.05	-0.08	-0.01	0.08	-0.01	-0.04	0.00	0.05	-0.07	-0.02	-0.01	0.00	-0.01
MAXIMUM DAILY AMOUNT .....	0.80	0.83	0.72	0.97	0.63	0.88	0.86	0.71	0.76	0.90	0.79	0.60	0.78	0.64	0.88	0.80
DATE .....	30	29	6	3	3	30	20	16	20	26	9	29	9	0	19	21
NO. OF DAYS COMPLETELY CLOUDED.....	20	18	21	13	17	13	13	25	19	11	18	16	10	15	18	19

## FORECASTS FOR DECEMBER, 1900.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 942. These were divided as follows:

District.	No. Issued.	VERIFIED.			Percentage
		No. Fully	No. Partly	No. Not	
Manitoba	88	74	8	6	88.6
Lake Superior	100	81	11	8	86.5
Lower Lake Region	117	97	14	6	88.9
Georgian Bay	117	96	13	8	87.6
Ottawa Valley	104	82	12	10	84.6
Upper St. Lawrence	103	81	16	6	86.4
Lower St. Lawrence	94	80	9	5	89.9
Gulf	98	82	5	11	86.2
Maritime Provinces	121	99	12	10	86.8
Total	942	772	100	70	87.3

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,  
*Director.*

Meteorological Office, Toronto,  
26th January, 1901.

MONTHLY AND ANNUAL SUMMARIES FOR THE YEAR 1900, AT CARMANAH, BRITISH COLUMBIA. LATITUDE, 48° 37' N.; LONGITUDE, 124° 47'. HEIGHT ABOVE SEA, 150 FEET.

MONTH.	TEMPERATURE.						WIND, DIRECTION, FORCE.									
	Mean Max.	Mean Min.	Mean Daily Range.	Mean.	Max.	Min.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	By Storm.	By Gale.
January	46.8	36.7	10.2	41.8	53.0	29.0	13	6	34	19	4	3	15	0	50	
February	45.1	34.2	10.8	39.7	50.0	18.0	8	11	31	1	2	2	16	1	59	
March	51.7	39.8	11.9	45.7	61.0	35.0	8	3	38	6	5	7	0	0	41	
April	54.7	40.2	14.5	47.4	67.0	30.0	7	0	21	0	1	2	42	0	32	
May	57.0	44.3	12.7	50.7	68.0	39.0	2	0	24	7	10	1	54	0	28	
June																
July	62.7	53.3	9.4	58.0	70.0	47.0	3	0	9	3	4	1	42	0	31	
August	62.1	52.3	9.8	57.2	66.0	45.0	0	0	21	2	3	3	25	1	38	
September	59.9	49.7	10.2	54.8	69.0	40.0	3	1	24	7	1	1	29	1	32	
October	53.2	43.1	10.1	48.1	57.0	34.0	4	2	37	14	2	7	11	1	18	
November	49.1	39.5	9.6	44.3	55.0	23.0	1	10	45	8	3	7	19	0	31	
December	48.1	39.9	8.2	44.0	54.0	26.0	2	5	52	6	4	6	16	1	38	
Year																

MONTH.	FORCE OF WIND.			RAIN.		SNOW.		Clouds.	Fog.	Thunder.
	8 a.m.	3 p.m.	8 p.m.	Amount.	Days.	Amount.	Days.			
				in.		in.				
January	IV	IV	III	42.80	21			17	0	1
February	III	IV	III	19.74	17	6.0	2	13	0	0
March	IV	IV	III	8.41	15			12	2	0
April	III	IV	II	8.41	9			12	0	0
May	II	III	II	6.15	9			8	0	0
June				11.38						
July	I	III	I	2.05	6			4	0	0
August	I	II	I	2.36	9			2	14	0
September	I	II	I	3.42	7			9	12	0
October	III	IV	III	14.56	22			15	8	0
November	IV	IV	IV	11.22	17	4.0	3	17	7	
December	V	V	V	23.66	23			1	58	1
Year				142.86						

## TEMPERATURE AND WEATHER AT DAWSON, YUKON.

NOVEMBER, 1900.

DE LEMELER, 1900.

Day.	TEMPERATURE		Barometer	Remarks	Day.	TEMPERATURE		Barometer	Remarks
	Max.	Min.				Max.	Min.		
			m.					m.	
1	0.5	-7.0	29.040		1	14.5	35.4	28.871	Cloudy.
2	7.1	12.3	28.554	Ice stopped running.	2	14.0	35.3	28.600	
3	9.1	2.6	28.650		3	25.0	54.2	29.020	"
4	15.2	20.6	29.091		4	20.2	44.2	29.019	Dense fog.
5	2.2	20.9	29.068		5	12.3	44.2	28.784	"
6	5.6	30.0	28.549		6	37.5	37.6	29.435	Cloudy, snow.
7	7.5	3.0	28.451		7	48.8	49.5	29.400	" fog.
8	5.0	1.4	28.770	Snow.	8	48.9	50.0	29.564	Dense fog.
9	16.8	21.7	29.280	"	9	43.0	48.4	29.328	"
10	14.4	28.6	29.129	Clear.	10	3.5	43.2	28.550	Snow.
11	-3.3	-28.2	29.465	Cloudy.	11	13.2	-22.8	28.531	Clear.
12	7.5	15.4	29.381	Snow.	11	12.8	6.0	27.955	Snow.
13	7.6	3.8	29.461	Cloudy.	13	13.3	12.3	28.225	"
14	3.7	-0.4	29.443	"	14	8.0	4.6	28.089	Cloudy.
15	5.3	-11.3	29.464	"	15	-0.5	9.0	28.284	"
16	8.5	12.4	29.601	"	16	2.0	10.6	28.210	"
17	4.5	18.2	29.459	" snow.	17	-13.8	-24.4	28.590	"
18	13.9	-47.0	29.569	Clear.	18	13.5	-25.2	28.921	Clear.
19	5.8	20.2	29.440	"	19	4.3	26.2	28.400	Snow.
20	-3.7	19.9	28.934	"	20	7.5	-14.3	28.149	"
21	27.6	-29.0	29.100	"	21	8.5	3.6	28.269	Cloudy.
22	-35.2	37.2	29.115	Cloudy.	22	3.8	2.8	28.559	"
23	-24.8	-38.6	29.110	"	23	1.8	-12.7	28.709	Snow.
24	-21.0	-58.7	28.659	Snow.	24	-4.3	18.0	28.638	Cloudy.
25	-5.8	26.2	28.432	Clear.	25	3.4	-20.7	28.800	Clear.
26	-4.5	-23.5	28.250	Cloudy.	26	2.1	15.7	28.922	"
27	-4.8	18.0	28.309	Snow.	27	6.0	-9.0	28.750	Cloudy.
28	-19.5	-34.4	28.610	Cloudy.	28	9.0	-3.2	29.025	Snow.
29	14.8	33.2	28.758	"	29	9.0	0.1	29.409	"
30	-4.4	-23.6	28.510	"	30	18.4	2.8	29.280	"
					31	18.5	-0.3	29.200	"
	6.75	20.02	28.987			-5.59	-19.80	28.757	
Mean temperature, -13.38					Mean temperature, -12.69				











P  
Astron.  
Can.

Author Canada. Meteorological Service.

Title Monthly weather review. 1900

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